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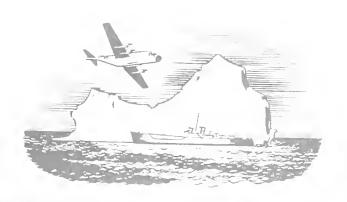
OCEANOGRAPHIC REPORT No. 41

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HAMILTON INLET AND THE STRAIT OF BELLE ISLE

July 1968

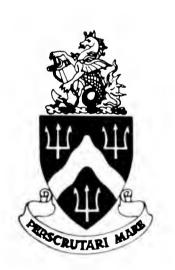


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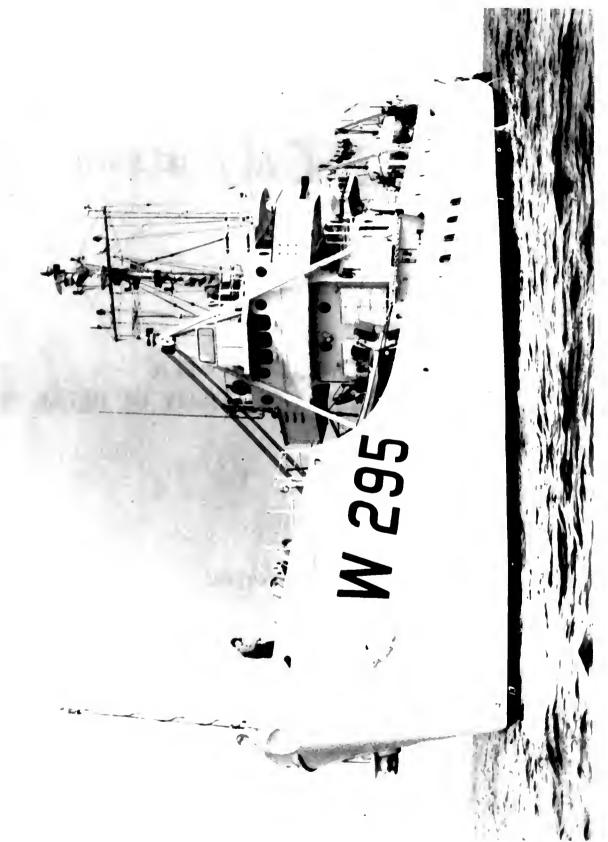
REPORT No. 41 CG 373-41

THE LABRADOR CURRENT BETWEEN
HAMILTON INLET AND THE STRAIT OF BELLE ISLE

July 1968



By Henry S. Andersen



ABSTRACT

In July and August 1968, the Coast Guard Oceanographic Unit conducted a cruise aboard the USCGC EVERGREEN to monitor the movements and deterioration of an iceberg and associated meteorological and oceanographic conditions. Only the results of the oceanographic observations are presented. Four oceanographic sections were occupied across the Labrador Current between Hamilton Inlet and the Strait of Belle Isle. Analysis of the surface dynamic topography and selected isopycnal surfaces indicates strong topographic control of the currents in this area. The temperature distribution along the southernmost section suggests that the coldest component of the shelf band of the Labrador Current passed landward of the area under study, reinforcing previously published information that the shelf band of the Labrador Current bifurcates east of Hamilton Inlet.

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The Labrador Current Between Hamilton Inlet and the Strait of Belle Isle

July 1968

Henry S. Andersen 1

INTRODUCTION

From 17 July to 16 August 1968, the Coast Guard Oceanographic Unit conducted a cruise aboard the USCGC EVERGREEN (WAGO 295) to collect information about iceberg drift and deterioration. This cruise was part of a continuing Coast Guard program to monitor the movements and deterioration of icebergs and associated meteorological and oceanographic conditions. The results of the oceanographic observations are presented here; iceberg drift and deterioration will be the subject of a future publication.

The USCGC EVERGREEN sailed from Boston, Massachusetts on 17 July 1968 en route to the area of operation in the western Labrador Sea between Hamilton Inlet and the Strait of Belle Isle (fig. 1). A medium-size drydock iceberg was located on 22 July and tracked until 9 August 1968. The trajectory of the iceberg was determined by using moored reference markers and periodic radar plotting. Concurrent with the tracking of the iceberg, direct current measurements were obtained by parachute drogues. A four-section hydrographic survey consisting of 48 Nansen stations was conducted during 22-26 July to determine the dynamic topography of the area. The USCGC EVERGREEN returned to Boston on 16 August.

Mr. Thomas C. Wolford, Oceanographer, served as Field Party Chief for this cruise. He was assisted by Lieutenant Commander Martin J. Moynihan, USCG, and Ensign Henry S. Andersen, USCGR. Technical assistance was provided by Danny L. Allen, Aerographer's Mate

Third Class; Michael L. Combs, Aerographer's Mate Third Class; Kenneth L. Mitchell, Sonarman Third Class; and Mr. Ronald B. Lorenz, student trainee.

DATA COLLECTION AND PROCESSING

Temperature data was acquired with paired reversing thermometers mounted on Teflon-lined Nansen bottles. Salinities were determined on board with an inductive salinometer, using tables prepared by UNESCO/NIO (UNESCO, 1966) for computing salinity from the measured conductivity ratios. Depths of sampling were determined from the wire angle of the cast and pairs of unprotected and protected thermometers on selected Nansen bottles. Dynamic heights were computed on board using a PDP-8/S computer. Dynamic heights in water shallower than the reference level were computed in a manner described by Kollmeyer (1967).

The data presented in the Tables of Oceanographic Data are reproduced from a computer listing from the National Oceanographic Data Center (Cruise No. 31–1260). Anomalies of dynamic height in the listing were computed by NODC, but all discussion of dynamic heights in the text and related computations in this report were based on dynamic heights computed on board USCGC EVERGREEN or by the Coast Guard Oceanographic Unit.

INTERPRETATION OF RESULTS

The Labrador Current comprises two distinct bands—one over the continental shelf and the other over the steepest part of the continental slope (Smith, et al., 1937). Near Hamilton Inlet, the inshore band over the continental shelf possesses colder (<1°C), fresher (<33.5%) wa-

¹ U.S. Coast Guard Oceanographic Unit, Washington, D.C. 20390. Present address, Office of Environmental Affairs, U.S. Department of State, Washington, D.C. 20520.

ter, while the offshore band over the slope possesses warmer (>1°C), more saline (>34.0‰) water, greater velocities, and a greater thickness.

A chart of sea surface dynamic topography relative to 600 decibars was prepared for the survey area to estimate the component of motion of the study iceberg resulting from ocean currents. Defant's method of estimating the level of no motion by comparing the differences in dynamic height between pairs of stations at varying pressures (Defant, 1961) was applied to several of the deeper stations in the area surveyed, and 600 decibars was chosen as a reference level. The 600 decibar level also was a suitable compromise between the deeper levels previously used and shallower levels desired to reduce errors in the integration procedure in shallow waters. Defant (1961), on a chart of the entire Atlantic Ocean, presented a depth exceeding 1900 meters as a suitable reference level for the survey area. Previous work done by the Oceanographic Unit in the region utilized a reference level of 1500 decibars.

In the area surveyed, the slope band of the Labrador Current appears on the chart of dynamic topography (fig. 2) as a concentration of contours near the eastern ends of the occupied sections. The shelf band is exhibited most clearly by the presence of negative-temperature water centered at about 75 meters (figs. 11, 13, 15, and 17) and appears to be split into several bands.

The trajectory of the iceberg under study was generally consistent with the dynamic topography of the sea surface relative to 600 decibars (fig. 2) until 4 August when it began moving westward against the geopotential gradient of an anticyclonic gyre. On 6 August the iceberg began moving northwestward against the circulation of the gyre. This seemingly anomalous motion probably is the result of a change in the wind observed at this time. The wind shifted from about 320° at approximately 7 knots to 170 at approximately 15 knots and continued to blow at this velocity for the next 28 hours. The final part of the trajectory up to 1900Z 9 August is difficult to explain in terms of the observed winds or dynamic topography. The relationship between this portion of the iceberg's trajectory and the dynamic topography should be inferred with caution because this portion of the trajectory occurred midway between two lines of stations (sections B and C) and two weeks after the completion of the oceanographic survey.

Because of the complexity of the surface dynamic topography and the uncertainty of the dynamic method in regions shallower than the reference level, an investigation of the region by isentropic analyses was conducted (figs. 3–10). It was recognized that in a comparatively shallow region such as the study area, where vertical mixing probably is extensive, isentropic analysis is not an entirely suitable tool of investigation either, but the analysis was performed to see if it would corroborate the results attained by the dynamic method.

Comparison of the variation of depth of the $27.00~\sigma_t$ and $27.25~\sigma_t$ surfaces (figs. 8 and 10) with the sea surface dynamic topography relative to 600 decibars (fig. 2) indicates agreement in the basic features of the current regime. Although this agreement might be expected because the distribution of sea surface dynamic heights and the configuration of density surfaces are both functions of the mass distribution, it is still encouraging that such agreement was found in view of the approximations used to integrate the dynamic height along the shoaling sea bottom.

The chart of dynamic topography (fig. 2) indicates a weak cyclonic gyre centered on the third station (station 10349) from the western end of section C. That this gyre plays a more important role in the circulation of the area than is apparent from its manifestation at the sea surface may be appreciated after examining the distribution of density along section C (fig. 21). A doming of the density surfaces, with its axis inclined to the west, arises out of a bathymetric depression centered on station 10350. The dome is associated with a cyclonic vortex whose speed of rotation below the pycnocline (located at about 20 meters) decreases with depth.

The vortex appears to be a direct consequence of a depression in the shelf at 53°N 53.5°W (fig. 1), near stations 10348-51 (figs. 15, 16, and 21). The bathymetric chart suggests that the sill depth is greater to the east of this depression north of section C. Vertical sections of temperature, salinity, and density through the bathymetric depression (figs. 15, 16, and 21) revealed an incursion into the depression

of slope water that is warmer, more saline, and denser than the adjacent shelf water. From comparison with sections B and D, it may be inferred that the lens of warm, salty water in the depression is the result of an influx of slope water between sections B and C.

Further evidence of the effect of the bathymetry upon the circulation in this area is afforded by the zigzag near 53°N 52 W of the slope component of the Labrador Current (figs. 2 and 10). This feature coincides with a northward projecting spur in the bottom topography (fig. 1). The 27.25 σ_t surface, which is 200 to 300 meters shallower than the bottom, possesses relief that is the approximate inverse of the bottom topography. As would be expected, the successively

shallower σ_t surfaces (figs. 4, 6, and 8) exhibit a decreasing correlation with the bottom topography.

The coldest water observed (-1.62°) occurred at stations 10370 and 10371 at the western end of section D (fig. 17). The absence of such extreme temperatures at the other more northern sections suggests that the source of this cold water was a filament of the Labrador Current inshore of the sections occupied by USCGC EVERGREEN. Bullard, et al. (1961), mention a division of the Labrador Current by the shoal off Hamilton Inlet. The bottom topography (fig. 1) includes a rise (<100 fathoms) near 54° 45'N, 55° 15'W which may be responsible for this division.

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Bullard, R. P., R. P. Dinsmore, A. P. Franceschetti, P. A. Morrill, and F. M. Soule (1961) Report of the International Ice Observation and Ice Patrol Service in the North Atlantic Ocean—Season of 1960, U.S. Treasury Department—Coast Guard Bulletin No. 46, 114 pp.

Defant, A. (1961) Physical Oceanography, Pergamon Press, I, 729 pp.

Kollmeyer, R. C. (1967) Contribution to and effect of the Hudson Strait outflow on the Labrador Current. Oceanography of the Labrador Sea in the vicinity of Hudson Strait in 1965. U.S. Coast Guard Oceanographic Report No. 12, CG-373-12.

Smith, E. II., F. M. Soule, and O. Mosby (1937) The Marion and General Greene Expeditions to Davis Strait and Labrador Sea. Scientific results, part 2, physical oceanography, U.S. Treasury Department— Coast Guard Bulletin No. 19, 259 pp.

UNESCO (1966) International oceanographic tables. UNESCO office of Oceanography, Paris, 118 pp.

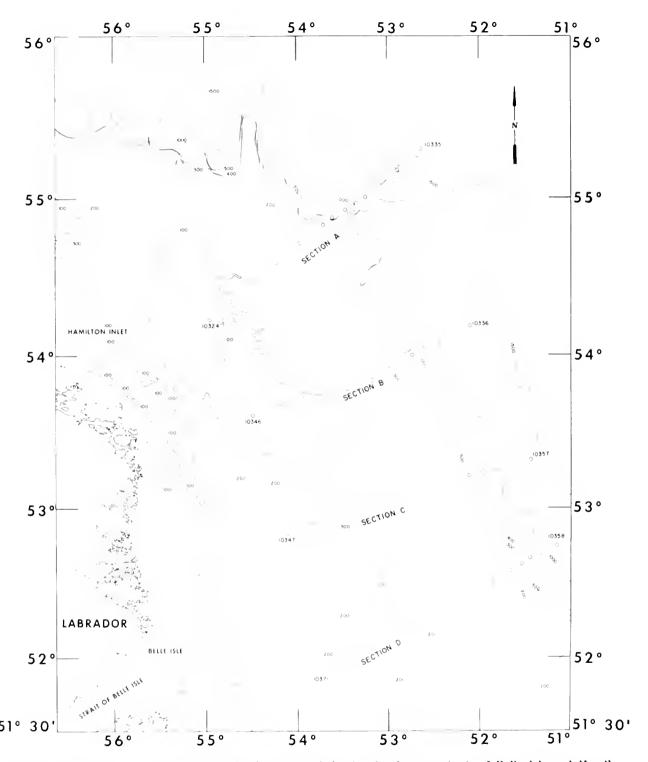


Figure 1. Bathymetric chart of survey area in the western Labrador Sea between Strait of Belle Isle and Hamilton Inlet. Contour interval is 100 fathoms to a depth of 500 fathoms and 500 fathoms thereafter. The chart is adapted from U.S. Naval Oceanographic Office charts BC0610N and BC0611N, Station positions are included.

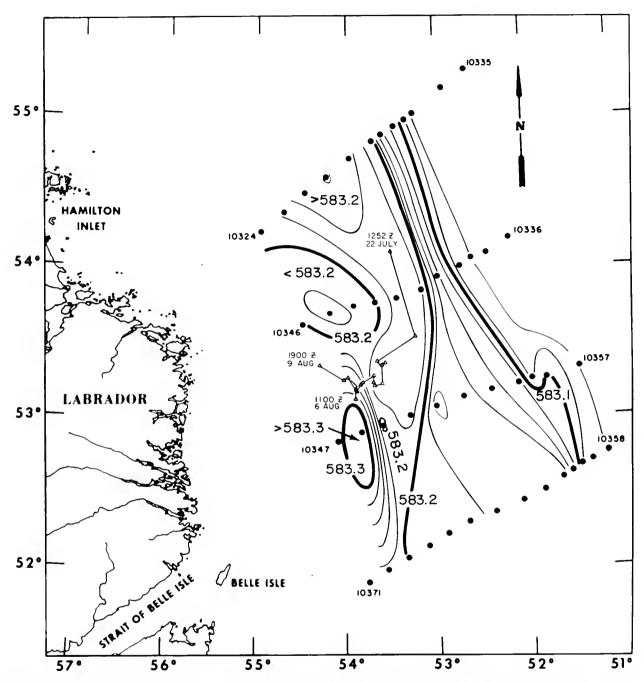


Figure 2. Sea surface dynamic topography (dynamic meters) relative to 600 decibars, 22–26 July 1968. Contour interval is 0.02 dynamic meters. Track line indicates trajectory of iceberg under study.

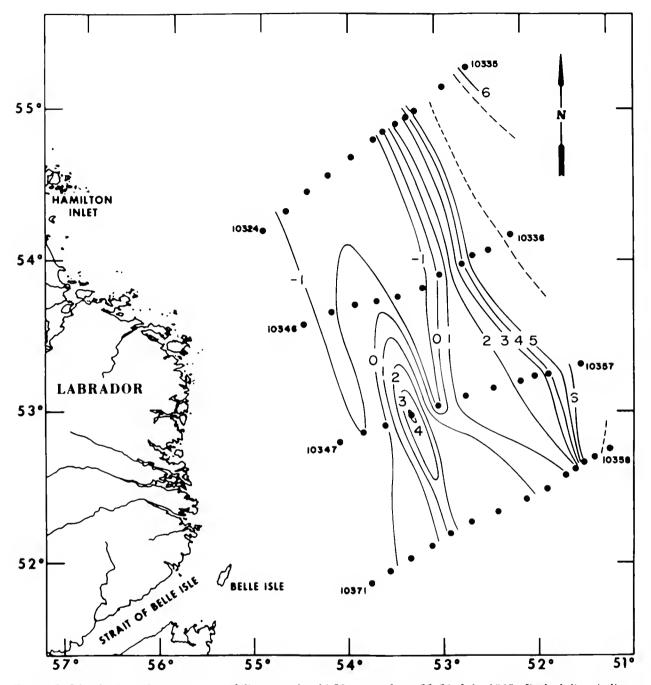


Figure 3. Distribution of temperature (°C) upon the 26.50 σ_t surface, 22–26 July 1968, Dashed line indicates intersection of the 26.50 σ_t surface with the sea surface,

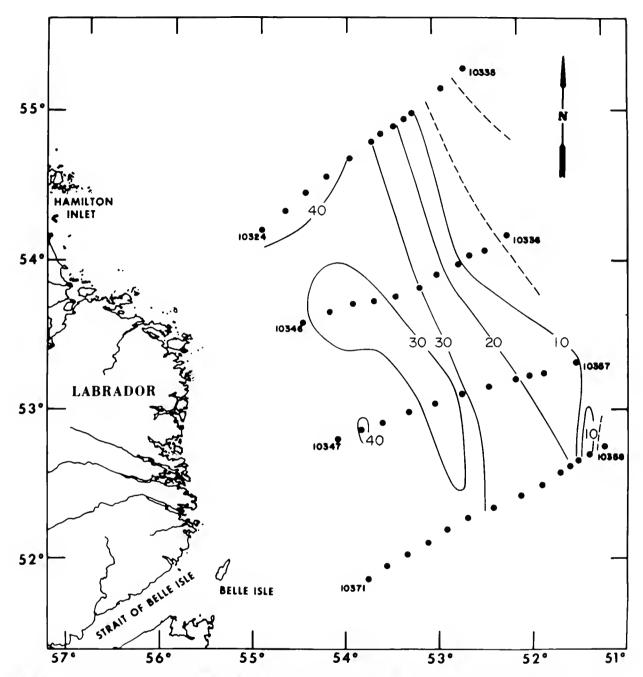


Figure 4. Depth (meters) of the 26.50 σ_t surface, 22–26 July 1968. Dashed line indicates intersection of the 26.50 σ_t surface with the sea surface.

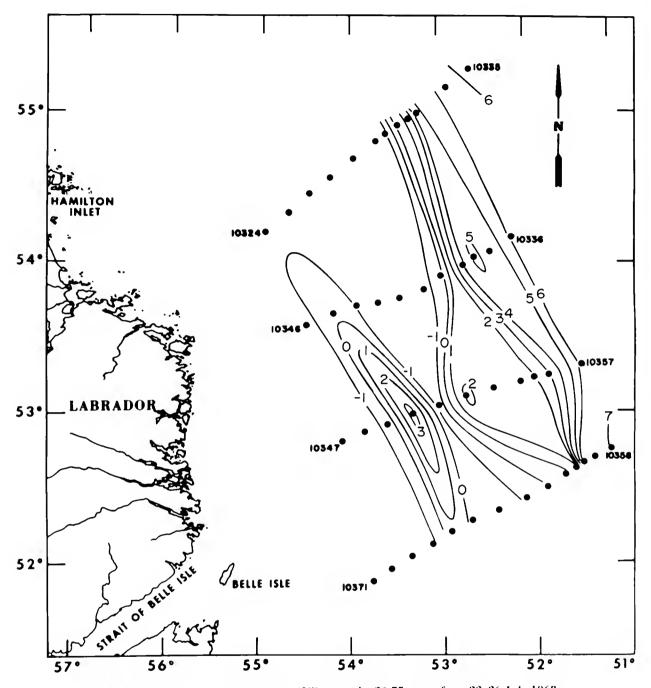


Figure 5. Distribution of temperature (°C) upon the 26.75 $\sigma_{\rm t}$ surface, 22–26 July 1968.

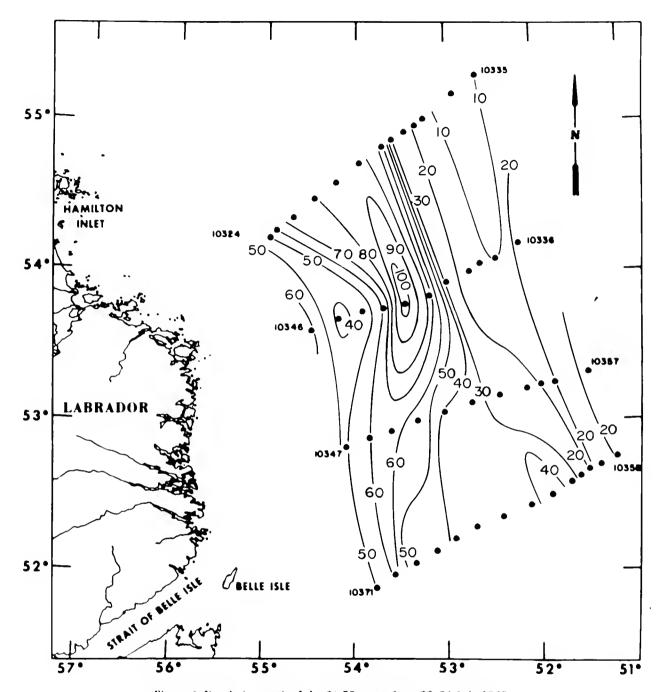


Figure 6. Depth (meters) of the 26.75 $\sigma_{\rm t}$ surface, 22-26 July 1968.

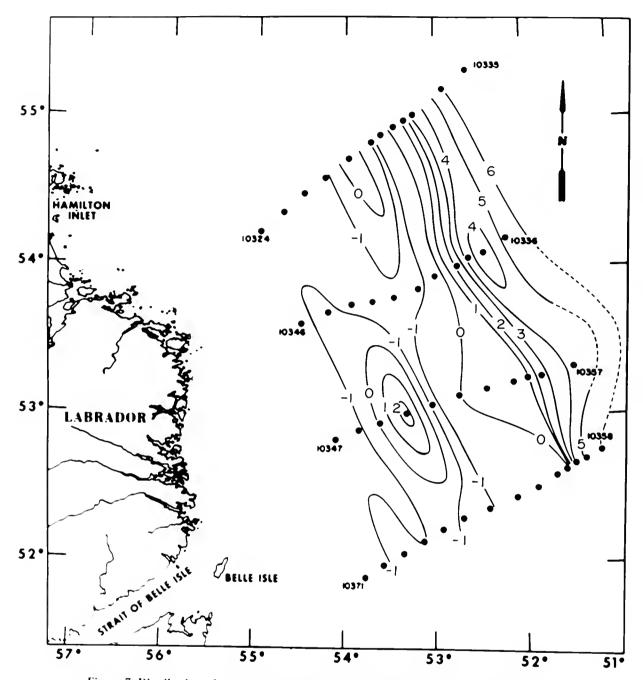


Figure 7. Distribution of temperature (°C) upon the 27.00 $\sigma_{\rm t}$ surface, 22–26 July 1968.

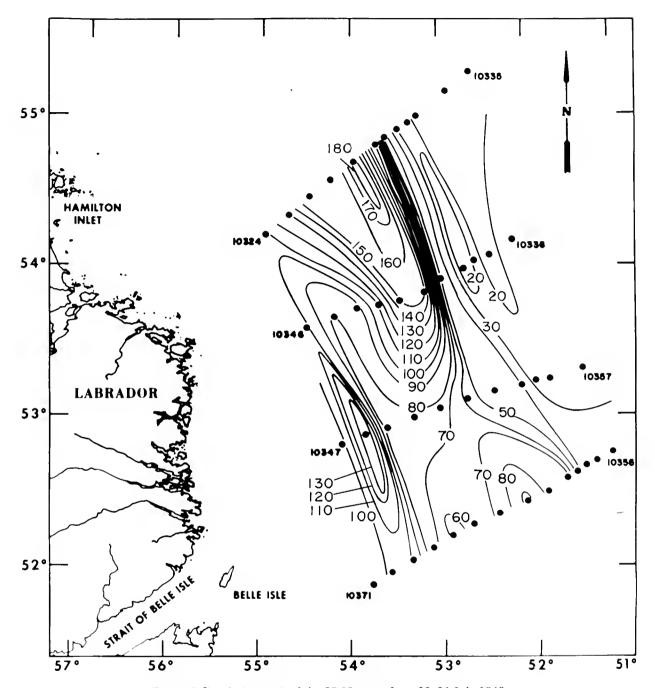


Figure 8. Depth (meters) of the 27.00 $\sigma_{\rm t}$ surface, 22-26 July 1968.

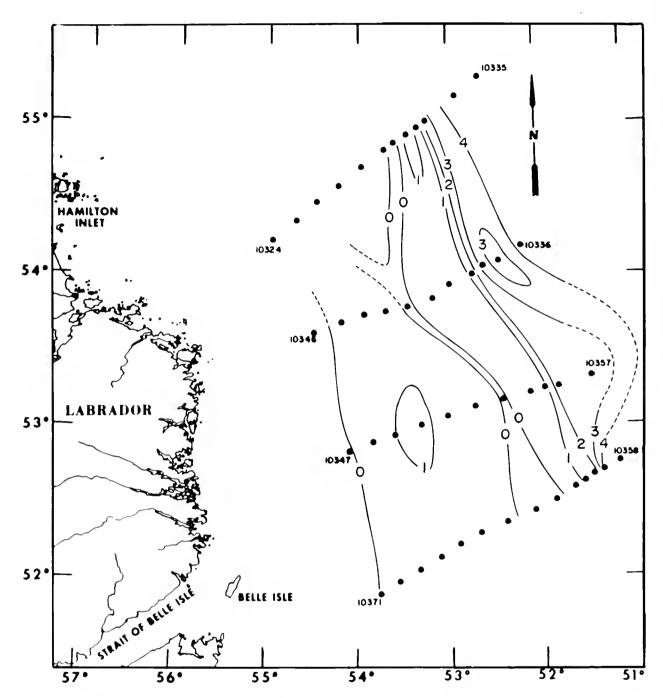


Figure 9. Distribution of temperature (°C) upon the 27.25 $\sigma_{\rm t}$ surface, 22–26 July 1968.

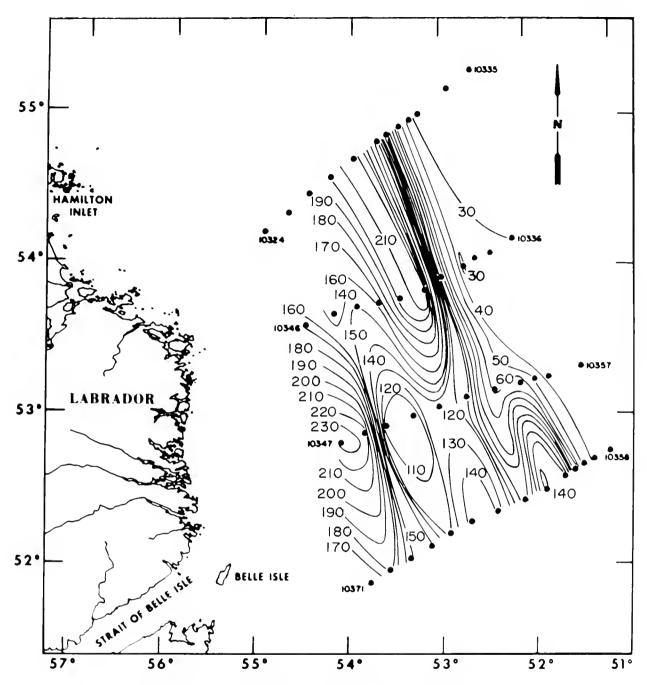


Figure 10. Depth (meters) of the 27.25 $\sigma_{\rm t}$ surface, 22-26 July 1968.

STATION NUMBER

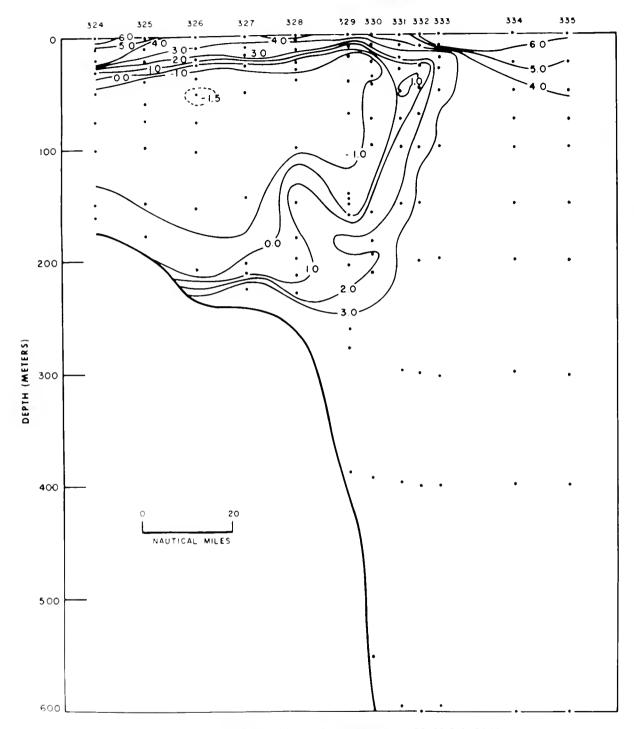


Figure 11, Temperature (°C) profile for section A, 22-23 July 1968.

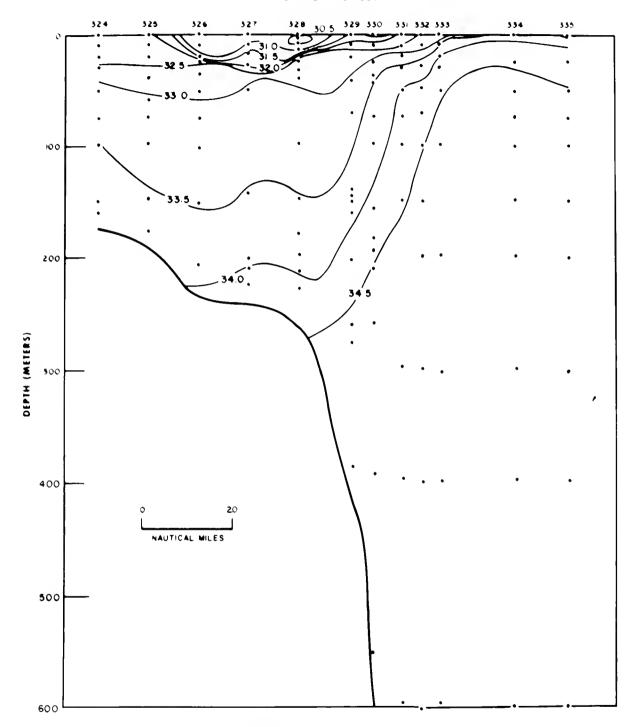


Figure 12. Salinity (%) profile for section A, 22-23 July 1968.

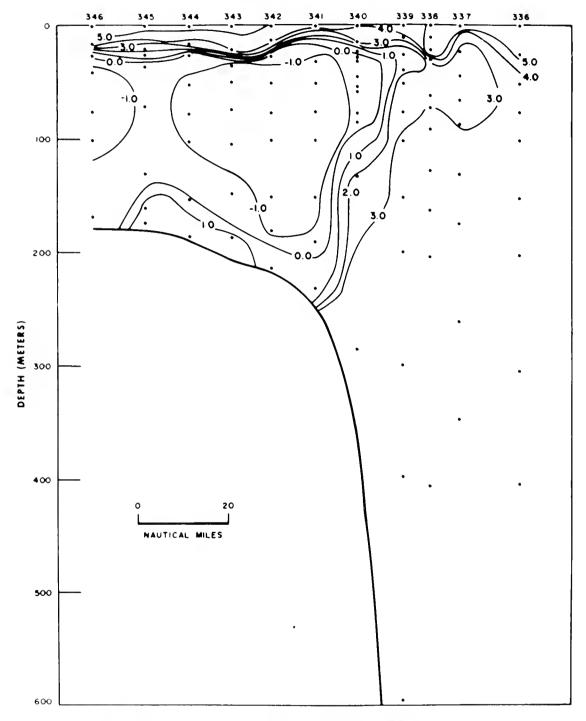


Figure 13. Temperature (°C) profile for section B, 24 July 1968.

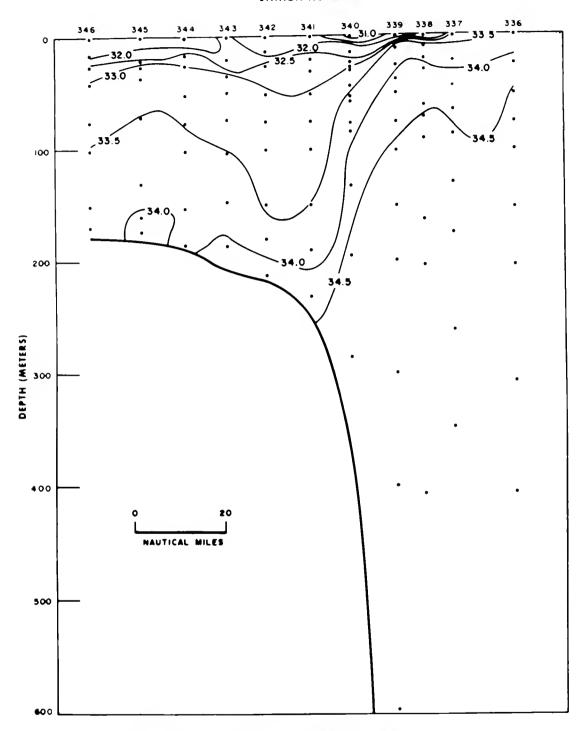


Figure 14, Salinity (%) profile for section B, 24 July 1968.

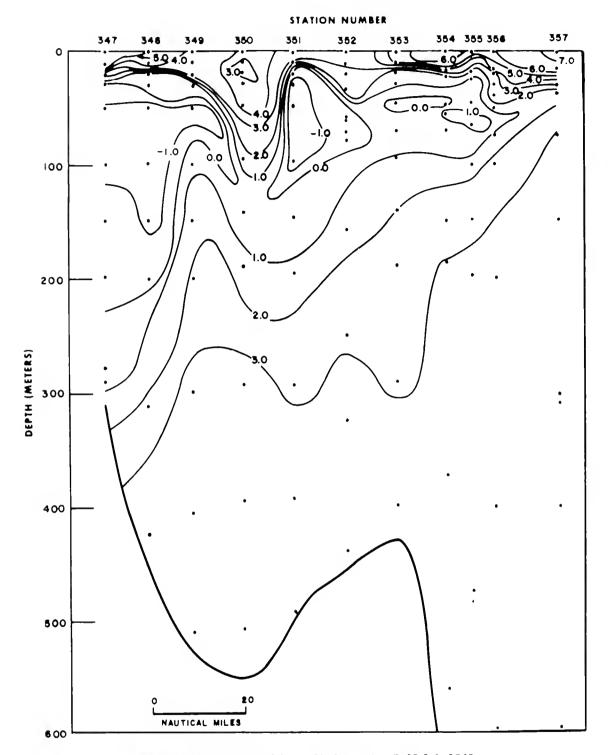


Figure 15. Temperature (°C) profile for section C, 25 July 1968.

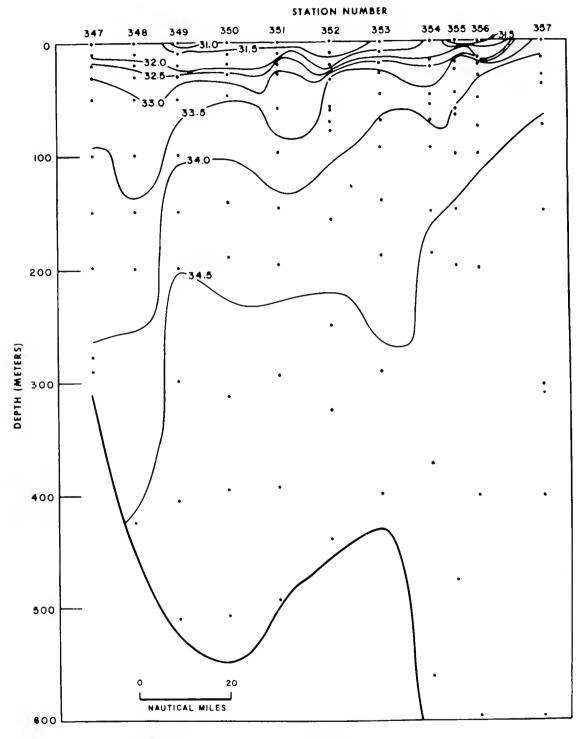


Figure 16. Salinity (‰) profile for section C, 25 July 1968.

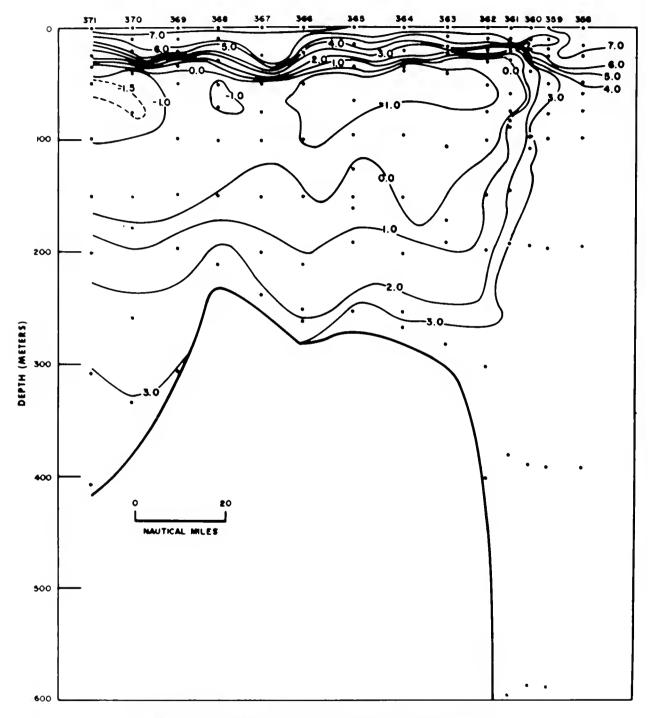


Figure 17. Temperature (°C) profile for section D, 26 July 1968.

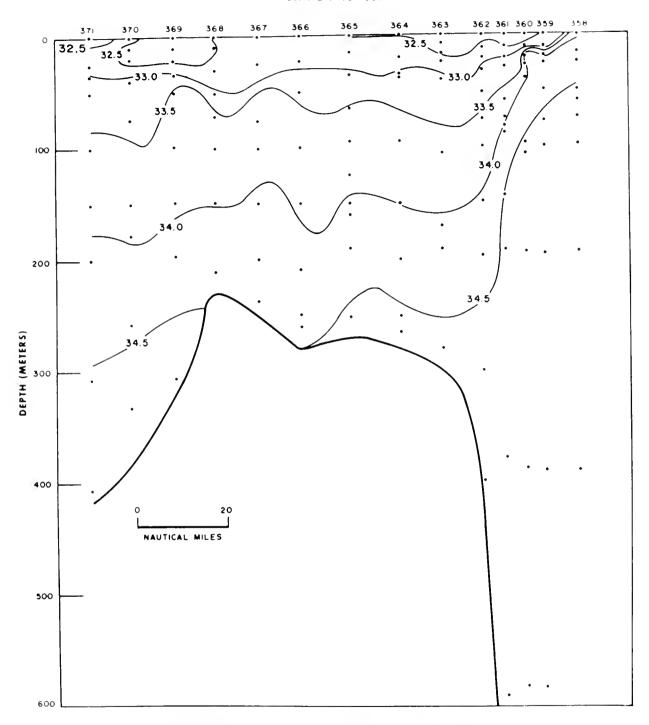


Figure 18. Salinity (%) profile for section D, 26 July 1968.

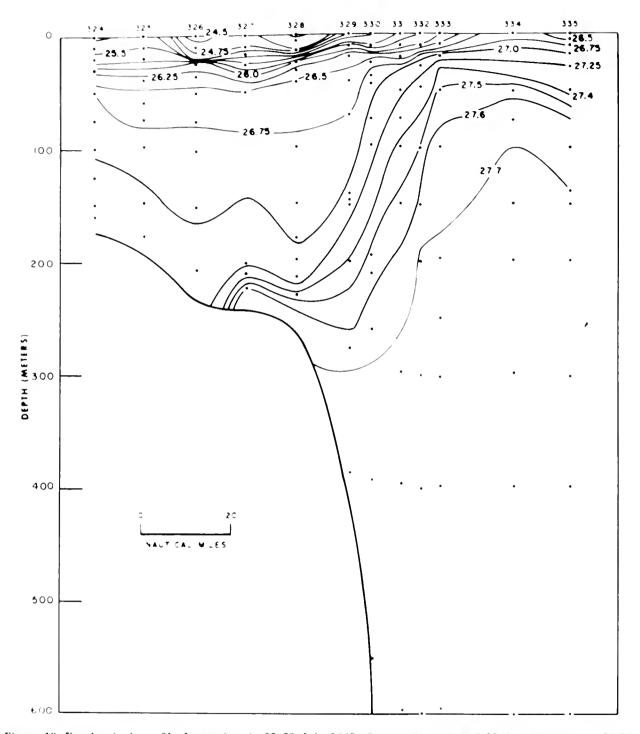


Figure 19. Density (σ_t) profile for section A, 22-23 July 1968, Contour interval is 0.25 for values up to 27.25 and 0.10 for values greater than 27.40,

STATION NUMBER

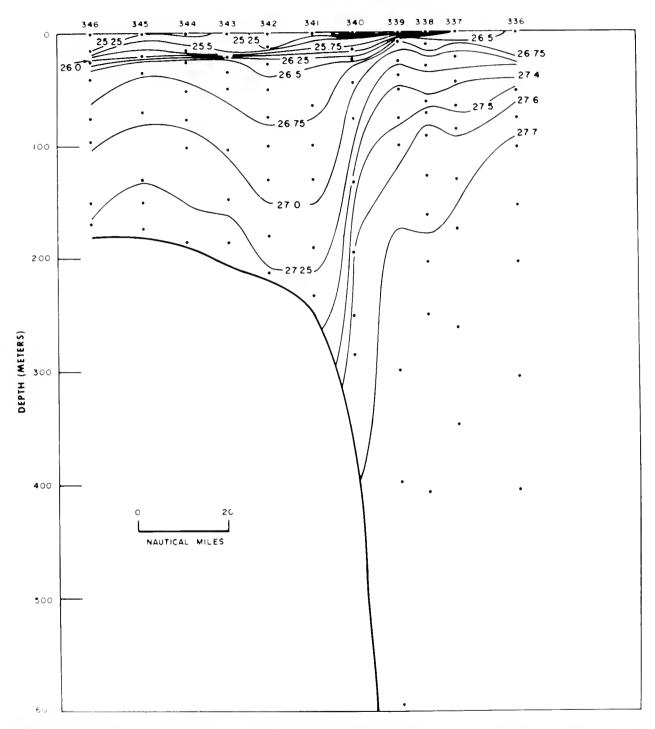


Figure 20. Density (σ_t) profile for section B, 24 July 1968. Contour interval is 0.25 for values up to 27.25 and 0.10 for values greater than 27.40.

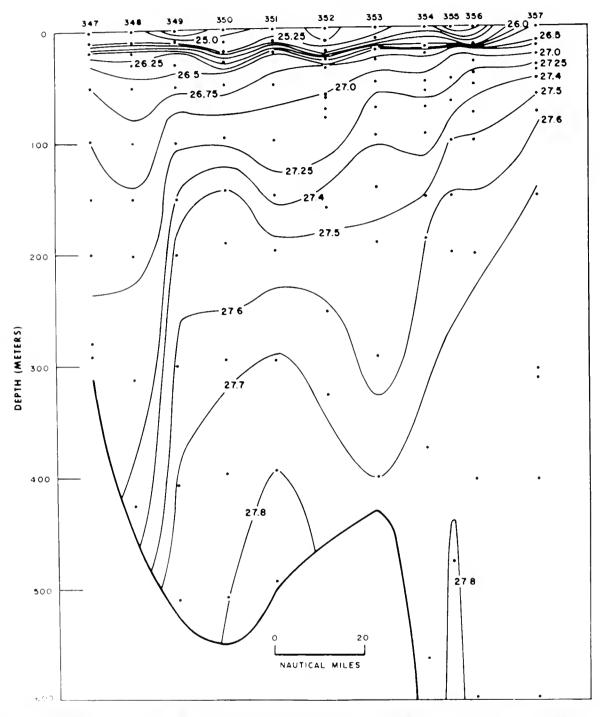


Figure 21. Density (σ_t) profile for section C, 25 July 1968. Contour interval is 0.25 for values up to 27.25 and 0.10 for values greater than 27.40.

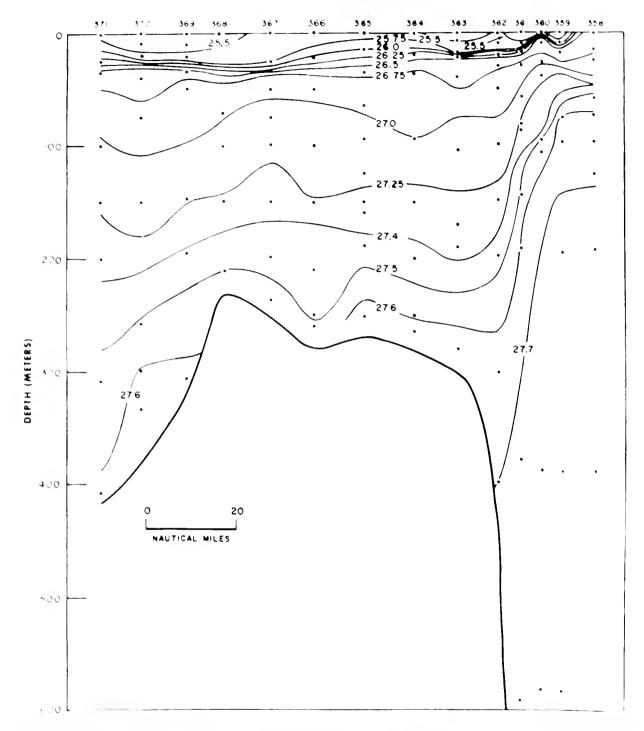


Figure 22. Density (σ_t) profile for section D, 26 July 1968. Contour interval is 0.25 for values up to 27.25 and 0.10 for values greater than 27.40.

APPENDIX A

OCEANOGRAPHIC DATA

A complete description of the codes utilized in the tabulation of oceanographic station data can be found in National Oceanographic Data Center publication M-2, Processing Physical and Chemical Data from Oceanographic Stations. (Rev. August 1964, supplement issued May 1966.)

To facilitate use of the oceanographic station data listing, entry headings which are not self-explanatory are described below.

Depth to Bottom

Depth of deepest sample to nearest multiple of one hundred meters.

Corrected or uncorrected sounding in meters.

Max. Depth of Samples Wave observations:

DHR. HGT. Round to nearest multiple of ten degrees.

In increments of 12 m. Sum of 5 meters plus increments of 1/2 m if 50 is added to direction.

PER.

If numerals 2 through 9 are entered, period in seconds is twice the numeric entry or $2\times$ (numeric entry) + 1. For other entries see WMO Code 3155.

SEA

Sea state according to WMO Code 3700.

Weather Code

If preceded by X, weather according to WMO Code 4501. If a two-digit entry, weather according to WMO Code 4677.

Cloud Code:

Type Amount Cloud type according to WMO Code 0500.

Cloud amount in eights. Entry of the numeral 9 indicates cloud amount could not

be estimated.

Water:

Color Code

Color according to Forel-Ule scale.

Trans...

Transparency in whole meters as determined by Secchi disc.

Wind:

Dir.

Barometer

Rounded to nearest multiple of ten degrees.

Speed or Force

If preceded by letter S, wind speed in knots, if preceded by letter F, wind force

according to Beaufort scale. Barometric pressure given in tens, units and tenths of millibars.

Air Temp. °C

Air temperature to tenths of a degree centigrade.

Vis. Code

Visibility according to WMO Code 4300.

No obs. depths. Messenger time Number of observed levels associated with the station. Entered in hours and tenths of an hour GMT. For Nansen casts, indicates time of release of messenger applicable to the observational level. For STD casts, indicates

the starting time of lowering the sensor.

Card type

OBS designates observed levels. STD indicates the values at this standard level were

interpolated by a modified 3-point LaGrange formula.

Depth (m)

Depth to nearest meter. A postscript T indicates depth was obtained thermometrically; S indicates uncorrected "wire out" depth. Postscript Q indicates value was marked doubtful by originator; P indicates value was considered doubtful by NODC,

Postscripts P and Q retain this meaning throughout the following entries.

Temperature to hundredths of a degree Centigrade.

S %

T °C

Salinity in parts-per-thousand. Entered to hundredths.

SIGMA-T

Specific-volume

Anomaly — \times 107

 $\Sigma \triangle D$ Dyn, $M \times 10^3$

Multiply entry by 10^{-7} to obtain specific-volume anomaly in cubic centimeters per gram. Multiply entry by 10-3 to obtain anomaly of dynamic height in dynamic meters referenced to the sea surface.

Sound Velocity

Sound velocity according to Wilson's formula entered to tenths of a meter per second, Dissolved oxygen in milliliters per liter entered to hundredths.

 $O_9 \text{ ml/l}$ PO₄-P µg-at/l

Inorganic phosphate in microgram-atoms per liter entered to hundredths. Total phosphorus in microgram-atoms per liter entered to hundredths. Nitrite-nitrogen in microgram-atoms per liter entered to hundredths.

NO₂-N μg-at/l NO₃-N μg-at/l SiO₄-Si µg-at/l

Total-P µg-at/l

Nitrate-nitrogen in microgram-atoms per liter entered to tenths. Silicate-silicon in microgram-atoms per liter entered to whole units.

pHEntered to hundredths.

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Table 1. Observed and interpolated data for stations taken by USCGC EVERGREEN from 22 to 26 July during the 1968 International Ice Patrol. The data listings were prepared from NODC listing No. 31-1260.

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			57		0050			127		321		26		0	0132	06	0 1	04	_	417													
	22	4	089	-	0050			127		320		26								417													
			51		0075			143		338		26		0	0118.	26	01	35		416													
	22	4	089		007			143		337		26					. 1			416													
			51		0100			136	_	350		26		0	0108	5 7	01	64		425													
	22	4	085		0100			136		350		26							_	425													
			51		012			131		357		27			0103			90		433													
			51		0150			078		375		27		0	0091	93	0.2	15		464													
	2 2		083		0150			078	_	374		27								464													
	22	4	085	5	0160	0	-0	043	3	384	1	27	21						14	483													

NCE SHIP LATITU	DE LO	ACITO SOLIDA NOCTE		E	ATION IGM	T)	YEAR	CRUISE NO.	RIGINATO STAT	ION	DEPTH TQ BQTTQM	DEPTH QF	0.65	WAVE		WEA- THER CDDE	CLOUD		5.1	NODC TATION UM EEP
260 EV 5420	7N 05	11/10 E		44 07	1	H9.1/10	1968	LIP	1032	5	0192	0.2		2 3	31 A	×1	0 2	-		000
				WATE	N S. OI	WIND SPEE R. DR	T- h	2 D		VIS.	NO. Ø85. DEPTHS	SPE(OBSERV	A TIONS							
					1	2 50	5 23	0 0	78 0	61 8	09				_				_	
MESSENGE CAST	C ARD TYPE	DEPTH (m)	1 1	c	\$ 14.	sic	M A -T	SPECIFIC	VOLU-#1	\$ △ D Dyn. M # 10 ³	VEFC 20F	CITY	Q2 ml/1	PQ4=F		rTA (=P g·a'	NO2=N yg + al.		5 C4=5	I рн
			1															1		
	STD	0000	05		210		538	0026	5034	0000		678								
007	OBS STD	0000 0010	05 03		209		538 553	002	4587	0025		678 625								
007	085	0010	03		211	7 2	553				14	625								
007	STD 085	0020 0020	02 02		225		573 573	002	2727	0049		584 584								
007	STD	0030	00		261		619	001	8365	0070		478								
007	085	0039	-01		285		644				14	417								
	STD	0050	-01		300		656	001	4775	0103		414								
007	OBS	0059 0074	-01		1309 1318		664				_	414								
007	085 STD	0074	-01 -01		319		672 672	001	3285	0138		418								
007	085	0098	-01		331	_	682			0.30		425								
	STD	0100	-01	31 3	333	2	683		2205	0170		425								
	STD	0125	-01		343	_	691	001	1429	0199		432								
007	OBS	0148	-01		356		702		0.206	0301		438								
007	51D 085	0150 0177	-01 -00		358 377		703 717	001	0280	0226		440								

PERENCE III ID III NO.	CODE	ATITUDE I	ONSITUDE S	\$QUARE	STATION TO	7[41		TION	TO OF STATE	CB HGFFEE		00015	·	5.7	NODC IATION UMBLE
11260) EV 5	4285N 0	54275w	186 44	07 23 0	11966	1 11P 103	2	0234 02 NO. SPEC	-	. X1	3 2		1	0003
				CUTOS	- CRAINS DIRL	1910 ME1	TP DRY	WET COOR							
					12	504 22	7 072	061 8	10						
		CAST CARD	Office (m)	1 %	\$ *1.	SIGMA=1	SPECIFIC HOLUME ANDMALFIES	\$ ∆ 0 014 ₩ k 10 ³	SOUND VE.OCHTY	02 +01-1	1074F	9000 m	% ⊃3 = % + £ + 8*	5 Ca=5	ĮH
				0.220	2075	1	003/031	0000	14.03						
		STE		0378	3075	2446	0034821	0000							
	014	085	0000	0378 0297	30754 3078	2446 2455	0033943	0034	14602						
	0.14	STE	0010	0297	30783		0033943	0034	14569 14569						
	014	0 B S S T C		0174	3116	2455 2494	0030207	0066							
	014	0BS	0020	0174	31162	2494	0030207	0000	14522						
	014	085	0025	-0032	32450	2609			14447						
	014	STO		-0081	3262	2624	0017846	0090							
	014	085	0036	-0124	32781	2639	001.040	00,0	14410						
	• • •	STO		-0150	3295	2653	0015101	0123							
	014	085	0051	-0151	32956	2653	• • • • •	-	14403						
	•	STO	0075	-0136	3312	2666	0013817	0160	14416						
	014	085	0076	-0135	33128	2667			14417						
	•	STO	0100	-0135	3323	2675	0012959	0193	14422						
	014	085	0102	-0135	33240	2676			14423						
		STE	0125	-0131	3336	2686	0011960	0224	14430						
		STE	0150	-0122	3348	2695	0011055	0253	14440						
	014	085	0152	-0121	33485	2695			14441						
		STO		-0092	3364	2707	0009917	0305							
	014	OBS	T0207	-0087	33662	2709			14468						

PERENCE SHIP LATITU	1 12	(SITUD)	SQUARE	TATION 1 SMT)	PEAP ETITE	CRUSE STATE	14.	State A 1914	1 1 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ercho Majoria	WEA C.		4-DC (14-12-4 (4-14-14)
111260 EV 5435	2N 05	4128w	186 44 couge code	07 23 0	30 196		-	0241 02 085 085 08741 - 1168 A	34 2		X1 4 2	2	0004
				13	504 2.	27 072 0	56 8	09					
era i i i i	Car	Offite Inc	7.5	\$ *	51GMA=7	SMCCC VOLUME ANDMA, FOR ST	₹ ∆ 0 579 M # 12	SSUND +ExCSITY	c:	24-9	1 1 4 1 = F - 15 - 1 = 75 2	14 m j = 14 m	4-5
	510	0000	0357	3088	2458	2033705	0000	14595					
030	085	0000	0357	30878	2458			14595					
	STD	0010	0286	3106	2478	0031737	0033	14568					
030	OBS	0010	0286	31063	2478			14568					
030	085	0017	0330	31617	2519			14596					
	STD	0020	0181	3169	2536	0026238	0062	14532					
0.30	085	0026	-0053	31873	2563			14429					
	STD	0030	-0066	3210	2582	0021881	0086	14427					
	STD	0050	-0122	3303	2659	0014532	0122	14417					
030	OBS	0050	-0122	33034	2659			14417					
	STD	0075	-0122	3317	2670	0013475	0157	14423					
	STD	0100	-0121	3330	2680	0012466	0190	14437					
	STO	0125	-0120	3344	2692	0011381	0219	14436					
0.30	OBS	0143	-0120	33545	2700			14441					
	STD	0150	-0119	3359	2703	0010255	0246	14443					
	STO	0200	0003	3388	2722	0008535	0293	14512					
030	0 8 S	0201	0007	33885	2722			14514					
030	085	0210	0051	34045	2733			14538					
030	OBS	10224	0371	34708	2761			14689					

ID.	CODE .TT.	/DE LO	orusi Eg	300 AH	\$74 10A 11 (S.M.) M.) DAY H	TEAR	ORGINATO CILISE STAT	100	בניים בניים בניים שכיים	2.00	# A 1 C % S	, - 15	10000 10000	51	ATCS LVIII
60	EV 5442	19 % 05	3578₩	n 4		MID 44 MID 44 MID 45 1001 MI	Er per n	T		34 10.A. 14.70%3	1 3	x 1	4 2		0005
					11	503 27	20 072 0	61 8	12						
	HISSHADI CAST Total of NO.	TARD	Str.m im	0 %	5 *	5G M # = 1	SMCMC +OUUPE ANDMALT-EE'	* 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	\$0040 +E20071	0:-	10 a=1 44 : 1	1014.47	% D;=% ≠4 × 8°	5 0 a=5 +a - b*	1 "
		STD	0000	0406	3051	2424	0036933	0000	14611						
	0 44	085	0000	0406	30507	2424			14611						
	0 44	085	0004	0351	30469	2426			14587						
		STD	0010	0274	3051	2435	0035839	0036	14556						
	044	085	0013	0226	30718	2455			14538						
		STD	0020	0060	3209	2575	0022493	0066	14483						
	0 44	085	0024	-0008	32554	2616			14459						
		STD	0030	-0072	3278	2637	0016651	0085	14434						
	0 4 4	085	0031	-0081	32809	2639			14430						
	0 4 4	085	0040	-0147	32931	2651			14402						
		STD	0050	-0145	3301	2658	0014654	0116	14406						
		STD	3075	-0139	3319	2672	0013271	0151	14416						
	0 4 4	085	0099	-0133	33334	2684			14424						
		STD	0100	-0125	3334	2684	0012147	0183	14428						
		STD	0125	0041	3344	2685	0012086	0213	14511						
	044	085	0148	0115	33534	2688			14549						
		STD	0150	0115	3354	2689	0011771	0243	14550						
	0 44	085	0179	0095	33647	2698			14547						
	044	085	0198	0059	33722	2707			14535						
	-	570	0200	0039	3373	2708	0009865	0297	14526						
	044	085	0213	0003	33869	2721			14514						
	0 44	085	0228	0170	34296	2745			14597						

EFFERENCE CTEM (D) TOE NO.	SM F	DE	Sprot E		PATON T	7548	C4 21 2.	TOPS AT DN JMTER	FOLLOW SOL	" OF	MALE SELATIONS HOT RESS	1651	2.2.0 2.2.0	-		101 175 175
311260	EV 5449	5N 05	3423∎	186_43		082 1968	5 11P 103	p %-	0410 0	. 34	1 2	X 1	4 2		Ç	000
					THIS DR	SPEET WE	10-	**	EDEFTHS CIDE	ET.A.						
				3000	231 DX	office 🖹		full.	CEPTHS CHIST	* A - C 40						
					0.8	505 2	10 072	058 8	13							
	**************************************	112	: [P*** ,**		5 ***	5 GW A #*	PROFICE COLLY ANDWALTER I		\$0.50 *E.007	0;=			N01-5			t -
		5*0	0000	0346	3141	2501	0029623	2000	14597							
	0.82	085	0000	0345	31406	2501	-01.01		14597							
		510	0010	0047	3229	2592	0020912	0025	-							
	0.82	085	0010	0047	32289	2592	0020		14478							
		510	0020	-0144	3281	2642	0016190	0044								
	0.82	085	0020	-0144	32813	2642	00101	, , , , , ,	14399							
		STD	0030	-0143	3295	2653	0015133	0059								
	082	085	0041	-0142	33075	2663			14407							
		570	0050	-0141	3314	2668	2013666	2038	14410							
	082	085	0070	-0135	33287	2680			14-18							
		STD	00.75	-0131	3332	2682	0012325	5121								
		STO	0100	-0111	3346	2693	0011261									
		SID	0125	-0090	3361	2704	0010218									
	062	085	0140	-0078	33693	2711			14462							
	082	065	0145	-0033	33802	2718			14-85							
		STD	0150	0025	3383	27:7	0000073	0201	14513							
	0.82	085	0150	0025	33825	2717			14513							
	0 8 2	0.55	0160	0000	33855	2720			14503							
		5 T D	0200	0109	3418	2742	0005889	0241	1456-							
	082	055	10203	0119	34200	2741			14569							
		STD	0250	0312	3459	2757	0005462	0272	14567							
	0.82	085	0260	0334	34656	2760			14679							
	0.8.2	0.8.5	*0276	0355	34738	2765			14690							
	_	5 T D	0300	0358	3483	2772	0004149	0296								
	0.82	085	*0386	0368	34866	2773			14717							

FEBENCE SP		ATITUDE	ro	NGITUDE 38	SQU		40	N TIM	'	YE A.R	CRUISE		ATION		DEFTH TO BOTTOM	DEPTH OF		SERV	ATION		WEA- THER COOR	CLOU	\$		NODC STATION NUMBER
11260 E		4525N	-	336 W	186		07 2			968	IIP		30	-	0600	3	11	_	2	StA .	x 1	4 2		-	000
						COLOR	1	DIR.	INTO	BARC BTB M	•	ET TEM	WET	COO!	ND. OBS. DEPTHS		CIAL A TIONS								
						-		-+	502	21	-	89	078	8	14			1							
) '	1/10	NO.	CARD TIPE	DEFTH IM1	1	7	s	٧.	SIGM	A = T	SPECIFIC ANOMA	VOLUM	* D	Δ 0 rN. M r 16 ³	. so vec	UND	0 2 ml/		101-1 15 - 11/		7AL-P 2 - 01/1	NO2=N ug - al/			
[ļ	1	STD	0000	0.	408	317	6 6	252	3	002	7495		000	14	628					ļ		1	1	I
	102	0	85	0000	ō.	408	317	60	252	3	0024		_	026	14	628									
	102	(51D 85	0010 0010		294	320		255		002	+401	·	V 2 6		585									
	102		STD 85	0020 0025		037 124	329 332		264 267		001	5638	0	046		450									
			STD	0030	-0	123	333	0	268	0	001	2501	0	060	14	417									
	102 102)85)85	0037 0044		122 079	334 335		269 269							420									
	102	,	STD 85	0050 0074		087 095	335 336		270 271		001	0692	0	083		441									
			STD	0075	-0	094	336	8	271	0	000	96 61	. 0	109	14	444									
	102	(985 STD	00 98 0100		065 062	337 337		271 271		000	9086	. 0	132		462									
			STD	0125 0150		008	339		272			8103 7131		$\frac{154}{173}$		495 541									
	102		85	0157	0	106	341	76	274	•0	•••				14	555									
	102 102		085 085	0183 0194		235 188	344 343		275						14	620									
	102	(STD OBS	0200 0210		213 250	344 345		275		000	5695	0	205		614									
			STD	0250	0	332	347	3	276	66	000	4602	. 0	230	14	677									
	102		985 STD	0259 0300	0	346 354	347 346	2	276 277	71	000	4186	. 0	252	2 14	685 696									
	102	(085 STD	T0392 0400		366 3 66	348		277		000	388(0	293		717 719									
	102		STD	0500 T0550	0	365 365	349	0	277	76		3916		332	2 14	735									
	102	,	085	10550	U	202	340	70	211	0					14	143									

EEFERENC CIET 10	- SHIP	LATITU	DE	LONGITUDE		SDEN IARE	STATION (GM		YEAR	CRUI	56 1	ATORS		DEPTH TO	DEPTH	01	WAVE SERVATIONS		CLOUD			NODE	
CTET IO			1/10	1/10	10*	1.	MO DAY	HR,1/10	1	NO		NU MBE	-	MOTTOR	S'MPL	S DIR	HGT PIR 1	CDDE	7191 A 41			NUMBER	Į
31126	50 EV	5455	8N	053276W	186	43	07 23	115	1968	3 11	P 10	331		1134	09	11	2 3	×α	0			0008	1
						WA	*** R	WIND	BAI	10- L	AIR TE	٧1. °C	vis.	NO.	591	CIAL			-				
						CODE	TRANS D				DRY	WET	CODE	OBS. DEPTHS	OBSER!	ADONS							
						CODE	+	1010		\rightarrow		_	_	_	-								
				, -			1	7 500	6 2	io	083	073		13	l,			,				-	_
	MESSENG TIME HR 1/1	or ND.	C A R I		m1 1	Ψ.	s */.	. 510	5M A = T	SMO	MAST-E	M1	E A D YN. M X 10 ³	. SDI VELI	UND OCITY	02 -1/	PO4-P	101AL=F +g = s1/1	NO2=N ug - et.	NO3=N 24 - 81/1	51 Ca-5		S C C
															-					1			\Box
			ST			448	3230		562	00	2381	5 (0000		652								
	11	. 5	085			1448	3229		562						652								
			ST			359	3263		597	00	2046	1 (0022		621								
	11	. 5	085			359	3263		597		1	_			621								
			51			250	3309 3309		643	00	1608	9 (040		582								
	11	. >	085			059	3364		643 700	0.0	1071	1 (0054		506								
	11	5	089			059	3363		700	00	1011	• '	,,,,		506								
			51			163	3402		723	0.0	0846	7 (0073		561								
	11	5	085			163	3401		723						561								
	ii		085			0082	3408		734						530								
			51		5 (0084	3409	2	735	0.0	0739	5 1	0093	14	531								
	1 1	15	085	009	9 (1125	3422	6 2	743					14	555								
			51			128	3423		743		0661		0110		557								
			51			192	3435		748	0.0	0617	7	0126		591								
	1 1	15	083			244	3446		753				- -		619								
			S1			245	3447		753		0570		0141		620								
			51			303	3465		762		0489		0168		656								
	1		08			343 366	3478 3485		769 773	00	00433	4	0191		701								
			5			366	3485		773	0.0	00406		0212		702								
	1	1.5	08			365	3486		774	00	,0406		0-12		717								
	•			TD 040		3365	3486		774	0.0	0405	6	0252		718								
			Š,			364	3487		774		0409		0293		734								
	1	15	06			363	3487		775			_			750								
			5		0 (363	3487	2	774	0.0	00416	4	0334	14	750								
			s'			360	3487		775	00	0421	7	376	14	766								
	1:	15	085	079	4. (359	3486	8 2	774					14	781								
			51	080 O1	0 (359	3487		775	00	0429	2	0419		782								
			51	rD 090		361	3487	_	774	0.0	00439	9	3462		799								
	1 :	15	069	5 1094	4 (362	3487	8 2	775					14	807								

REFERENCE									Τ.	447			_			
SH		DE L	ONGITUDE 1	M/ RSDEN SQUARE	STATION TI	YEAR	CRUISE STA		TO D	MAX. EPTH OI	WAVE ISERVATIONS	WEATHER	CLOUD			NOUC
DOE NO. CO	DE	1/10	1/10 8		H YAG CM			TION		OF MPL'S OIL	HGT PER S	CODE	TYPL AM	1		UMBER
311260 E	v 5458	2N 0	53203W	186 43	07 23 1	139 1968	IIP 1033	12	1426	14 16		X1	3 2			0009
				WAT		IND BAR	O- AIR TEMP	Z VIZ	NO.	SPECIAL	1					
				COLOR	TRANS DIR.	SPEED MET		VET COD	OBS. DEPTHS OB	SERVATIONS						
					17	506 20	3 083 (72 8	15	_	1					
MESS	ENGA CAST	CARD	DEFTH (m)	7.1	5 %.		SPECIFIC VOLUME	₹ △ D	SOUNO		. PO4-P	101AL-P	NO7-N	NO3-N	5104-5	
	ME OF NO.	TYPE	DEFTER SMI	' `	,	SIGMA-T	ANOMALT-2107	0YN. M x 103	AETDCIL		µg = 01/1	µg - e1∕1	μg = α1/1	ye = 01/1	νg - e1/	pH.
				†		1			1							+
1	[STD	0000	0604	3271	2576	0022451	0000	1472	2	1		,		I	
	139	085	0000	0604	32705	2576	0021471	0000	1472							
	• • •	STD	0010	0463	3290	2608	0019437	0021	1466							
	139	085	0010	0463	32902	2608	00-7731	0-21	1466							
		510	0020	0167	3354	2685	0012097	0037								
	139	085	0028	0036	33880	2721	001001	0-31	1449							
		STD	0030	0042	3390	2722	0008600	0047	1450	2						
	139	085	0047	0098	34052	2731			1453	2						
		STD	0050	0113	3408	2732	0007648	0063	1454	0						
	139	085	0070	0192	34252	2740			1458	0						
		STD	0075	0202	3429	2742	0006686	0081	1458	6						
		STD	0100	0253	3447	2753	0005744	0097								
	139	0B5	0100	0253	34470	2753			1461							
		STD	0125	0320	3465	2761	0004993	0110								
		STD	0150	0362	3477	2767	0004481	0122								
	139	085	0150	0362	34774	2767			1467							
	120	STO	0200	0368	3484	2771	0004112	0144								
	139	085	0200	0368	34837	2771			1468							
		STO	0250 0300	0365	3485	2772	0004029	0164								
	139	51D 085	0300	0363 0363	3487 34865	2774	0003940	0184	1470							
	137	STD	0400	0362	3487	2774 2775	0003050		1470							
	139	085	0400	0362	34873	2775	0003958	0223	1471							
•	1 3 9	510	0500	0362	3487	2775	0004032	0263	1471							
		510	0600	0361	3487	2775	0004032	0304	1475							
	139	085	0600	0361	34874	2775	0004113	0204	1475							
		STD	0700	0361	3488	2775	0004154	0345								
		51D	0800	0361	3488	2775	0004239	0387								
:	139	085	T0802	0361	34882	2775	500.237	0-01	1478							
		510	0900	0350	3487	2776	0004272	0430	1479							
		510	1000	0347	3486	2775	0004362	0473	1481							
	139	085	1000	0347	34864	2775			1481							
		STD	1100	0356	3488	2776	0004429	0517	1483							
		510	1200	0365	3490	2776	0004470	0561	1485	2						
:	139	OBS	T1204	0365	34901	2776			1485	2						
		STD	1300	0365	3491	2777	0004479	0606	1486	8						
1	139	085	T1388	0364	34919	2778			1488	3						

ICE	SHIP	LATITUDE	ro	NGITUDE 28	MARSDE SQUARE	IN L	STATION TU	TEAST IN		ATDR'S	DEPTH DEP	TH OA	WAVE SERVATIONS	W EA-	CLOUD		5	HOOC TATION
10.	CODE	· 1	/10	1/10	10*	1° A	H TAG CA	1/10	NO.	MIRWOR	BOTTOM S'MI		HG1 211 31	CODE	ITPE A M	1	N	UMBER
260	ΕV	55009	N 05	3141W	186			65 196			2030 1	3 34	1 2	x1	3 5			0010
					-	WATE			BO- AIR TE.	V15.		PECIAL						
						DDI	I DIL	0. 1771	bel BULB	BULB COD	DEPTHS DEST	RVA TIONS						
							17	511 1	66 094	072 8	13							
ſ	MISSING	Ta	CARD		T -	$\neg \uparrow$		1	SUCINC VOLU	w. ₹ ∆ o	SOUND	T	104-1	TOTAL-F	NO2-N	NO3-N	SI D4=SI	
	MISSING!		TYPE	DEPTH Uni	1 1 8	c	5 %.	SIGMA-T	AHOMALT-1		. VELOCITY	03 41/	1 ya - a1/1	#B = 41/1	ug = al/l ;	ys - 61/1	yg - et/i	pН
-	HR 1/10				-			-		-		+	1				-	
I		1	STD	0000	066	ا ۱	3313	2602	001993	9 0000	14750	1			1		I	ı
	16		085	0000	066		33131	2602	001773	, 0000	14750							
	10		STD	0010	063		3356	2640	001639	3 0018								
	16	5	OBS	0010	063	32	33561	2640			14746							
			STD	0020	026		3405	2718	000900	9 0031								
	16	5	OBS	0020	026		34047	2718			14602							
	16		\$10 085	0030	029		3441 34411	2745 2745	000646	8 0039	14619							
	10	,	510	0050	024		3444	2751	000586	8 0051								
	16	5	OBS	0050	024		34438	2751	••••	• ••••	14602							
			STD	0075	030		3461	2759	000513	0 0065	14636							
	16	5	OBS	0099	039		34732	2764			14661							
			STD	0100	035		3473	2765	000464									
			STD	0125	035		3476 3480	2766 2768	000447									
	16	5	STD OBS	0150 0198	03		34854	2772	000431	0 0099	14687							
	10	,	STD	0200	03		3485	2772	000401	3 0120								
			STO	0250	036		3486	2773	000397	6 0140	14694							
			STD	0300	036	65	3487	2774	000393	9 0160	14702	!						
	16		OBS	T 0 3 0 2	036		34868	2774			14702							
	16	5	OBS	T0398	036		34876	2775			14717							
			STD	0400	036		3488 3488	2775 27 7 5	000395									
	16	5	570 085	0500 0595	036		34880	2775	000400	0239	14748							
	10	_	STD	0600	036		3488	2775	000405	7 0279								
			STO	0700	036		3488	2775	000412									
			STD	0800	039		3488	2776	000418	7 0362								
	16	5	OBS	0800	039		34884	2776			14782							
			STO	0900	035		3489	2776	000419									
			STD	1000	035		3489	2777	000425	3 0446	_							
	16	>	OBS STD	1043 1100	039		34896 3490	2777 2777	000427	1 0489	14820 14830							
			STD	1200	03		3490	2778	000427									
			STO	1300	03		3491	2778	000442									
	16	5	OBS	T1312	039		34908	2778			14868							

CE D.	SHIP	LATITU	Ot	LDN	GITUDE	DC te	MARS SOU	DEN		ON TI	WE	YEAR	O CRUISE	RIGINA	TOR'S ATION	=	DEPTH	M AX. GEPTH OF		WAVE)NS	W EA-	CLOUE		S .	NODC TATION
0.	1000		1/10		1/10	2 2	10*	11.	MOTO	AY H	1/10		NO.		MEER		BOTTON	S'MPL"	S DIR	HG# Pt#	SEA	CDDE	TIPE AN	1	N	UMBER
60	Ev	5510		0.5	2532W		186	1	-	\rightarrow		1968	110	103	3.4		2752	16	34	1 2		X1	3 6			0011
00	C 4 1	3310	(M	05.	2 J J Z W		100	WA			IND	1		IR TEM		1			-	1 12	1	1 ^ 4	0.6	,	1	0011
								COLDS	TRANS.	OIR.	SPEED	METE)• <u> </u>	RY	WET	CODE	ND. OBS. DEPTHS	SPE	CIAL ATIONS							
								CODE	(m)	UNC	PORCE	(mbe	1 80	71.0	BULE		DEPTHS									
										17	510	15	9 12	22	100	8	14									
Γ.	MESSEN GO			_			Τ_				Ī	1	SPECIFIC		. 5	ΔD	1 .0	UND		PO4-		OTAL-P	NO. 1	NO N	\$104-5	
- 1	TIME	CAST	CAR		DEPTH I	lm I	T	°C	\$	٠/	SIG N	I-A		101010	ים	△ D N. M.	VEL	DCITY	D 2 m1/	,,,,,,		#g = e1/l	NO2~N #g = 01/1	ND3-N vg - ot/I		p H
- 4	HR 1/10	-	_				-		+											+	-		<u> </u>		-	-
- 1				_					1		١.				1		1	!		i					1	1
			S1		000			672	338		26		001	5041	0	000		764								
	187	,	085		000			672	338		26			20.0		٠		764								
			S1		001			606	341		26			2048		014		743								
	107	,	\$1		002			544	343		27		000	9535	0	024		723 713								
	187		085		002			514 477	345		27		000	7602	0	033		699								
			51 \$1		005			380	346		27			5229		0 4 6		664								
	187	,	089		005			380	346		27		000	1667		-		664								
	10/		S1		007			371	34		27		0004	4592	0	058		666								
	187		085		007			371	34		27		000			- , 0		666								
	10,		\$1	-	010			370	348		27		000	4087	0	069		670								
	187	,	085		010			370	348		27		• • •					670								
			\$1	-	012	5	0	367	348	34	27	71	000	4012	0	079	14	673								
	187	,	085		014		0	365	348	353	27	73					14	676								
			S1	ro	015	0	0	365	348	35	27	73	000	3917	0	089	14	677								
	187	7	085	5	019	9		367	348	363	27							686								
			\$1		020			367	348		27			3907		108		686								
			\$1		025			367	348		27		000	3914	0	128		694								
	187	,	085		029			367	348		27					_		702								
				r D	030			367	348		27		000	3921	. 0	148		702								
	187	7	085		039			369	348		27			2071		1 . 7		720								
				TD.	040			369	348	-	27			3971	-	187		720								
			51		050			364 361	348		27			3999 4053		227 267		734 750								
	187	,	51 083		060 T060			361	348		27		000	4053	. 0	- 01		750								
	101		51		070			360	348		27		000	4128		308		766								
	187	,	085		1079			359	348	-	27		000					781								
				rD.	080			359	348		27		000	4210	0	350		782								
			51		090			362	348		27			4253		392		800								
			51		100			365	349		27			4298		435		818								
	187	,	085	5	T100	3	0	365	349	01	27	76					14	819								
			51	D	110			365	349		27		000	4317	0	478		835								
	187	7	085		119			364	349		27							851								
				T D	120			364	349		27			4301	_	521		852								
				ΓD	130			361	349		27			4332		564		867								
				ΓD	140			356	349		27			4337		608		882								
		_		rD	150			350	349		27		000	4326	0	651		896								
	187	7	089	5	T159	5	0	342	349	30	27	81					14	909								

EFFERENCE	SHIP	LATITU	35	LONGIT	บอะ		PREDEN QUARE		STATION			EAR	_		ATOP'S	_	DEPTH	DEFIE		w #32#C	AVE VATION	s	WEA-	Cron			NODO	i N
121 ID.	CODE		1/10		1/10	10			AO DAY				CRUISE NO.		TATION UMBER		10110	A S'MPL	1		GE PER		CODE	THE			NUMBE	
311260	Ev	5518		0523				-			8 1	068	HP	10	116		3091	1	1	-	2		x1	4			001	
11200	1 CV	7710	414	0,52,5	1	1.0		A AT		WIN				IR TEA		-	NO.	1		٦' ٔ	. -				, ,	,	001	. ~
							001		TRANS DI	t.	MITO OIL	M ETE (mbs	1 E	RY JLB	WET	CODE	28.0	1 carren	CIAL VATION	s								
								\dashv	10		11	15	9 1	06	089	8	14	1										
1	MESSENG EMIT	CAST		_				_		Ť			secino	_	\$	Δο	1	UND			PO4=P	1,) TAL-9	NO2-1	NO ₃	-N 510	٠.	_
	\$1A4 \$	# 'NO.	CAR	E C	DEPTH U	71	1 %		s */		SIGMA	1=1	ANOM		(i) 0	rn, M t 10 ³		OCITY	02 m	121	ya = 01/		g + 61/1	N8 - 80				н
	HI 1/10	-				-		_		+		_			-		+			\rightarrow		+			+		+	_
ì	1	1 1	51	rn	0000	,	065	4	3346	ı	262	١	001	737	, l	000	1 14	752		- 1					ı	1	1	
	20	۵	085		0000		065		3346		262		001		0 0	000		752										
	20	0	51		0010		058		3394		267		001	294	7 0	015		731										
			51		0020		052		3428		271		000			026		712										
	20	A	089		0025		049		3439	5	272		• • •					704										
		-	51		0030		047		3441		272		000	827	5 0	035		696										
			51	O	0050)	040	8	3445		273	6	000	726	5 0	051	. 14	673										
	20	8	089		0050)	040	8	3445	2	273							+673										
			51	rD	0075	ò	035	8	3470		276	1	000	494	1 0	066	, 14	659										
	20	8	089	5	0075	ò	035	8	3469	9	276	1					1	659										
			51	T D	0100)	036	9	3477		276	6	000	452	8 0	078	1 1	4669										
	20	8	089	5	0100)	036	9	3477	1	276	6					14	669										
			51	rD	0125	5	036	5	3481		276	9	000	421	8 0	089	1	+672										
			S	T D	0150)	036	4	3483		277		000	405	0 0	099	1	4676										
	20	8	OB:	_	0150		036	4	3483	4	277							4676										
					0200		036		3486		277		000	390	9 (119		4686										
	20	8	08		0200		036		3486	4	277							4686										
			_	TD	0250		036		3487		277			390		139		4694										
				T D	0300		036		3487	_	277		000	394	3 0	156		4702										
	20		08		030		036		3487		277							4703										
	20	8	OB:		0399		036		3487	4	277							4718										
				TD	0400		036		3487		277			398		198		4718										
				TD	0500		036		3488		277			403		236		4734										
		_	_	10	0600		036	-	3488	_	277		000	409	/ (279		4750										
	20	8	OB:	-	0600		036		3487	7	277		000	. 10	2 6	220		4750										
	20				0700		036		3488	6.	277		000	418	۷ (320		4767										
	20	8	08:		0790		036		3488 3488	,	277		000	427	1 ^	362		4784 4784										
			_		0800		036		3488		277			427		405		4799										
	(1000		035	-	3488		277			433		449		9814										
	20		08:	10 - 1	1000		035		3487	A	277		000	700	0 (747		4814										
	20				1100		036		3490	U	277		000	434	3 0	492		4833										
	20		08:		119		036		3491	^	277		000	4 2 4	, (772		4851										
	20	. 0		TD	1200		036		3491	•	277		000	440	0 0	536		4852										
				T D	1300		036		3492		277			440		580		4868										
				TD	1400		036		3492		277			441		624		4883										
			_	TD	1500		035		3493		277			442		668		4899										
	20		0B:		159		035		3493	4	278		000					4915										

CE					- =	MAR	SDEN	STATI	ON TIA				RIGINA			DEPTH	MAX. DEPTH	0.	WAVE	2NS	WEA+ THER	CLOUD			NODC
0.	CODE	LATITUO	30	LONGITUI	\\ \alpha \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	2 an			SMT)		YEAR	CRUISE		ATIO		10 10110A	. OF	1	HGT PI		CODE	TYPE A MI			UMBER
0.	2001	•	1/10		1/10	10*	1.	MO D	AY HR	1/10		NO.		UMI	-		7	1	1-1-	1	-		1	_	
60	EV	5411	1N	05206	w	186	42	07 2	4 0	36	1968	11P				2615	16	15	2 3		X2	5 8	1		0013
							WA	FIL	W	IN O	BARG	۰ -	AIR TEM		VIS.	NO. 085.	SPEC	JAI	,						
							COLOR	TRANS.	OIR,	OR	M ETE (mbs		ULB	WE		DEPTHS	OBSERV	ATIONS							
									15	\$20	44		72	0.7	72 6	14	_								
,		+							10	320	144	- 0	12	7					1		-			Τ -	T
	MESSENGE TIME	CAST	CARE		PTH (m)	Т т	°C	s	٠/	SIGN	AA-T	SPECIFIC	AUJOV C	ņt	₹ ∆ D	. 50	OCITY	0 g m1/	PO.		1014L-F	NO2-N ug = 01/1	NO3=N yg = 01/1	1\10 a = \$1	рН
	HR 1/10	NO.	TYPE											_	x 103	ļ ···				-	-	-	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	-	
1																									
- 1		, ,	ST	ס ' ס	000	0	672	338		26		001	5106	3	0000		764								
	036	•	085		000	_	672	337		26							764								
			\$T	-	010		639	339		260			3946		0015		754								
			ST		020		593	340		261		001	2354	*	0028		739 729								
	0.36	•	OBS		025		566	341		26		000	0074		0039		712								
			ST		030		516	342		27			9979 5810		0055		664								
			ST		050 051		381	346		27		000	701	,	5055		662								
	036	5	0BS		075		363	34		27	-	000	430	1	0067		662								
	036	Ł	085		076		362	34		27				-			662								
	0.50	,	ST		100		365	341		27		000	406	7	0078	14	668								
	0.36	į.	085		101		365	348		27						14	668								
	0 30	•	ST		125		365	348		27	72	000	394	2	0088	1.4	672								
			ST		150	0	364	341	37	27	74	000	381	7	0097		676								
	036	5	085	C	152	0	364	341	967	27							+677								
			\$ T	D 0	200	0	365	341	97	27		000	383	3	0117		4685								
	036	5	085		203		1365		873	27				_			+686								
			\$ T		250		365	34		27			384		0136		4693								
			ST	-	300		365	34		27		000	387	8	0155	, 14	4702								
	03	6	OBS		305		365		77P		66P	000	393		0194	. 14	4718								
			51		3400		364	34	88 879	27	75	000	, , , , ,	ر	019		4718								
	03	ь	085		0404 0500		364	34			75	000	400	4	0234		4734								
			\$1 51	_	0600		362	34			75	_	3408		0274		4750								
	03	6	085	_	0605		362	_	884		75	000		-			4751								
	0.5	0	51		2700		360	34	-	_	76	000	0410	9	0315		4766								
			51		0800		357	34			76		417		035		4781								
	03	6	085		0802		357		883		76					1	4782								
		-			0900	(359	34	89	27	76		0422		0399		4799								
			Si	r D	1000	(361	34			76	000	0433	0	044		4816								
	03	6	08		1014		361		896		77		.				4819								
					1100		363	34			77		0429		048		4834								
			-	-	1200		0365	34			78	000	0432	5	052		4852								
	0 3	6	08		1210		365		925		78	00	0422	_	057		4854 4868								
					1300		0363	34		_	79	-	0433 0433		061		4883								
					1400		0358 0350	34 34			80		0429 0429		065		4896								
	0.2	,			1500 1619		0337		935		82	000	U 7 L 7	'	000		4911								
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REFERENCE	SHIP	LATITUD		NGITUDE \$8	SOU	DEN	STATION	TIME (T	TEAR	CRUISE	DIGINA	TATION		DIPTH 10	MAX. DEPTH	. 1	WAVE SERVATI		WEA-	CLOUE		S	NODC	
06 ND.	CODE		1/10	1/10	10"		MO DAY		_	NO.	Ä	UMBER	- 1	MOTTOM	5 MPL	S DIL	HGT PE	SEA	CODE	11PE A.S	-1	N	UMBER	┙
1126	O EV	5405		5226 W	186	42	07 24	058			10		\square	1959	18	15	1 2		x 2	5 8	i İ		0014	4
						COLDE	TRANS D	WIN O	BAI	it.	DRY DRY	WET	CODE	NO, OBS. DEPTHS	OBSERV	CIAL /ATIONS								
						C001	(a)	.0	Ct (m)		78	072	} - 	14										
	· · · ·						1	5 51	6 00	1	. vorn		A D.	SDU	140		, 10.	_,	101AL-P	NO2=N	NO3-N	SI Da-Si	1	-
	MESSENG TIME HR 1/11	M NO.	TTPE	DEPTH IMI	,	Ψ.	\$./.	. 51	GMA-1	ANON	ALT-11	, D	N, M. L 10 ³		CITY	0; m//	//		# 8 • 61/1	и ц - 01 /1	μg = e1/I		PM	_
				1	1		١					-		1	700		-			l	1	1	Į.	
			STD	0000		550	3341		638	001	658	> 0	000		709 709									
	05	8	OBS	0000		550 398	3340 3370		638 678	001	278	8 0	015		652									
			STD	0010		291	3394		707		001		026		611									
	05		5 70 085	0022		275	3398		712			- •			605									
	05	0	STO	0030		247	3411		724	000	837	7 0	035		596									
	05	я	085	0044		216	3426	8 2	739					14	587									
	0,	•	STO			216	3429		741	000	678	2 0	050		588									
	0.5	8	085	0065	0	216	3437		748						592									
			STO	0075	C	249	3447		753	000	569	7 0	066		609									
	0.5	8	085	0086		280	3456		758						626									
			STD			310	3465		762		488		079		642									
			STD			348	3477		768	000	435	4 0	091		664									
	0.5	8	085	0130		353	3478		768	004	417		101		673									
			STO			358	3484		770	000	,41,		101		679									
	0.5	· 8	085	0174		362	3485		773	000	395	7 0	122		684									
			STD STD			363	3486		773		393		142		692									
	0.5		085	0261		363	3486		774						694									
	0.2		STO			364	348		774	000	390	8 0	161	14	701									
	05		085	0347		364	348		2774					14	709									
	0.	.0	STO	-		364	348	7 7	2774	00	397	71 0	201	14	718									
			STO		(364	348	3 2	2775	00	0405	51 0	241	14	734									
			STO	0600	(362	348	3 2	2775	00	0410	1 0	281	14	750									
	0.5	8	085	T0665	(360	348		2775						760									
			STE			357	348		2775		0413	_	323		765									
			STO			352	348		2776	00	0419	90 0	364		779									
	0.5	8	085	T0877		350	348		2776						791									
			ST			351	348		2776		0427		406		795									
			STO			353	348		2776		0432		449		813									
			STO			355	348		2776	Ų0	0439	,	7793		831									
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METERENCE	SHIP			- 2	MARSOEN	STATION TIN		ONGIN	ATOR'S		EPTH	MAX. CEPTH		WAVE	WEA-	crono			NDDC
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CTRY ID.	CODE	· ·	1/10	1/10 E	SQUARE	(GMT)	YEAP	CRUISE NO.	STATION NUMBER	80	TIOM	DEPTH OF S'MPL'S	0.00	FRVATIONS	CODE	TIFE		. 5	STATION NUMBER
CTRY ID.	CODE		1/10	NGITUDE ES	10° 1° 186 32	(GMT)	35 1968	CRUISE NO. B IIP 10	STATION NUMBER	0 3	10 110M 357 NO.	0 5 5' MPL'S 0 3	0 # SE	ERVATIONS	THER	COOFF		. 5	MOITATE
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CTRY ID.	CODE EV	5355	1/10 8N OS	DEPTH (=)	10° 1° 186 32 WA COLOR COOL	10 O DAY HR 10	78A9 35 1968 ND BA SHED ME OI IM FORCE IM SIGMA-T 2434 2434	CRUISE NO. 3 IIP IC OFFICE OF STEAM OF	STATION NUMBER 1340 MP. TO WET BULB 1061 101 101 101 100	7 1 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	357 NO. DBS. EPTHS 13 SOU VELO	OBERTH OF STAFFLIS SPEC ORSERVA ND CITY 510 510	OBSE OR. 16	2 2 PO4-P	THER CODE	7 2	NO3=N	s104-8	0017
CTRY ID.	MESSENGE T ME HR 1/10	5355	CARD TYPE STO OBS STD	DIPTH (=) 0000 0010	10° 1° 1° 186 32 WA COLOR CODE 1° C	(GMT) MO DAY HR 07 24 1 TRANS OIR 17 5 %.	75 1968 11/10 BA 100 BA	CRUISE NO. 3 I I P I C NO. ARTE TER DRY BULB SULB AND	STATION NUMBER 1340 MP. C WET BULB 061 070 070 070 070 070 070 070 070 070 07	7 1 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	357 NO. DBS. EPTHS 13 SOU VELO	OBETH OS STAFF, IS OS SPECORSERVA ND CITY SION SION SION SION SION SION SION SION	OBSE OR. 16	2 2 PO4-P	THER CODE	7 2	NO3=N	s104-8	0017
CTRY ID.	MESSENGA T WE HR 1/10	5355	CARD TYPE	DEPTH (=)	10° 1° 186 32 WA COLOR COOL	10 O DAY HR 10	78A9 35 1968 ND BA SHED ME OI IM FORCE IM SIGMA-T 2434 2434	CRUISE NO. 3 IIP IC OFFICE OF STEAM OF	340 MP. C WET 9ULB 061 061 000	7 1 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	357 NO. DBS. EPTHS 13 SOU VELO	03 SPEC ORSERVA ND CITY 510 520 599	OBSE OR. 16	2 2 PO4-P	THER CODE	7 2	NO3=N	s104-8	0017
CTRY ID.	MESSENGE T ME HR 1/10	5355	CARO TYPE STD OBS STD OBS STD OBS	0100 S S S S S S S S S	186 32 	3063 3063 3063 3201 3237 3283 3283	78.0 17.0 18.0 19.0 19.0 19.0 19.0 19.0 19.0 19.0 19	CRUISE NO. 3 1 P 1 C GO	340 MP. C WET 9ULB 061 061 000	7 1 2 0 3 1	10 1770M 357 NO. 085. EPTHS 13 SOUVELO 146 146 146 146	03 STAPEC ORSERVA ND CITY 510 520 526 496	OBSE OR. 16	2 2 PO4-P	THER CODE	7 2	NO3=N	s104-8	0017
CTRY ID.	MESSENGE T ME HR 1/10	5355 5 CAST NO.	CARO TYPE STD OBS STD	OEPTH (m) 0000 0010 0014 0020	10° 1° 1° 1° 1° 1° 1° 1° 1° 1° 1° 1° 1° 1°	(GMT) O 7 24 1 TRANS OIR 17 17 5 %. 3063 30630 3201 32378 3263	78A	CRUISE NO. 3 1 P 1 C GO	340 MP. C WET 9ULB 061 061 000	7 1 2 0 3 1	357 NO. DBS. EPTHS 13 SOUVELO 146 146 146	03 SPEC ORSERVA ND CITY 510 520 526 496 556	OBSE OR. 16	PO4-P	THER CODE	7 2	NO3=N	s104-8	0017
CTRY ID.	MESSENGE TWE HR 1/10 13: 13: 13: 13: 13: 13: 13: 13: 13: 13	5355	CARO TYPE STD OBS STD OBS OBS OBS STD OBS	OLPTH (%) OLPTH (%) OLPTH (%) OOOO OOOO OOOO OOOO OOOO OOOO OOOO	10° A1° 11° 186 32° WA COLOR CODE 1 ° C 0400 0400 0377 0315 0138 0065 -0050 -0050	3063 3063 3201 32378 3280 33306 33280 33306	TRANS	CRUISE NO. 3 1 P 1 C GO	340 MP. C	7 1 2 0 3 1	13 SOU VELO 146 146 146 144 144 144 144 144 144 144	03 57EC 08SERVA ND 0117 03 03 05 10 05 10 05 20 05 20 05 20 05 4 96 05 10 05 10	OBSE OR. 16	PO4-P	THER CODE	7 2	NO3=N	s104-8	0017
CTRY ID.	MESSENGE T ME 1/10	5355	CARO 117E STD OBS STD OBS OBS OBS OBS STD OBS	0000 0000 0010 0014 0029 0028 0029 0030 0044	186 32 WA COLOR COOR COOR COOR COOR COOR COOR COO	3063 3063 3201 32378 3263 33156 33280 333480	78.0 17.10 18.0 19.0 19.0 19.0 19.0 19.0 19.0 19.0 19	CRUISE MOD. AIR TE MOD. AIR TE MODE MODE MODE MODE MODE MODE MODE MOD	374TION NUMBER 3340 MP. C	7 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1466 1466 1446 1444	03 SPEC ORSERVA 510 510 510 520 599 526 496 451 455	OBSE OR. 16	PO4-P	THER CODE	7 2	NO3=N	s104-8	0017
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NCE IQ.	SHIP	LATITU	Ot	LONG	SITUOE	DCTR	MARS		STAT	ION 1	IME	YEAR	CRUI	O RIGIT	STAT	_	-	OEPTH TO	OFF	H c		WAVE RVATI		WEATHER	CC	0 U O			NOOC
NO.	C001	•	1/10		1/10	0 1	10*	111	MOIL	YAC	HR.1/10		NO		NUM		- 1	\$0110A	S MP		. [>	1 GT PE	B SEA	CODE	TYPE	ANT	1 _		NUMBER
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							· [WA			WINO	BAR	-	AIR TE	MP			NO.	T	ECIAL	٦.								
								COLOR	TRANS.	OIR.	SPEED OR PORC	MET	ER	ORY SULS	W BU		ODE	OBS. DEPTHS	Carre	VATION	\$								
										17	514	05	8	067	0	61	8	08			1								
	MESSENGI TIME HR 1/10	NO.	CARC		OEPTH 0	m)	1	٣	5	٠/	SIG	MA-T		FIC VOL			103 103		OCITY	02 m	1/1	PO 4		101A L-P #8 - 01/1			NO3-N 10 - 01/1	51 O 4 - 5	
	15	1	ST OBS ST	D	0000 0000 0010		0	460 460 189 006	31 31 32 32	727 25	25 25	15 15 80 24	00	2 82 4 2203	16	00	25	14	650 650 542							1			1
	15 15		ST OBS ST OBS	D	0030 0030 0050		-0 -0 -0	125 125 135	329 329 330	92 922 99	26 26 26	50 50 64	00	1539	6	00	62	14 14	411 411 412										
	15	1	ST OBS ST	D	0075 0075 0100	5 5	-0 -0 -0	135 135 128	33 33 33	22 218 35	26 26 26	74 74 85	-	1306		01		14	418 418 427										
	15		OBS ST	D	0100	5	-0 -0	128 126 108	33: 33:	+2 53	26 26	90 98		1151 1074		01 02		14	427 433 4447										
	15) 15)	1	085 085 ST	D	0150 0190 0200		-01 -01	108 046 023	33	760 33	27 27	98 15 19	00	0877	15	02	63	14	486 499										
	15	1	08\$	•	1023	1	0	066	34)59	27	33						14	4548										

REFERENCE	SHIP	LATITU		HGITUDE 100	SQU		{	ION THE		YEAR	CRUISE	RIGINATO	ION	\neg	OEPTH TO TOTTOM	DEPTH OF	OBSE	WAVE ERVATION:	COD	COOE	S	5	NODC TATION
DE NO.	-	-	1/10	1/10	10*	1		DAY HI			NO.	NUA		+		S'ANPL"	1	HGT PER	EA	TYPE A	1	-+	
31126	OI EV	5347	N 0	53266W	186	33 WAT			74			1034		_!¢	218	02	16	2 2	X1	7/5	. 1	1	0019
						COLOR	TRANS.	+	SPEED	- BARI METI	C .	RY W	VET C	IS.	OBS.		CIAL /ATIONS						
						CODE	(m (-	D	FORCE	(mb	1) 80	JLB B	U/B		UEFIRS								
								17	518	05	4 0	94 0	72 8	3	09				7	_			_
	11341		CARD TYPE	DEPTH (m)	1	70	\$	٠/٠.	SIGA	MA-T		VOLUME ALT-210 ⁷	₹ △ DYN. x 1	м.	VELO		O 2 m1/1	PO4-P		NO2-N	NO3-N ug - ot/1	\$1 O ₄ = 5 ug = 61/	
					1				1						1			-	Ì	1		1	1
	1	1	STD	0000	0	425	316	64	25	12	002	8543	000	00	146	634		'	,				
	17	4	085	0000		425		642	25							634							
			STD	0010		417	31		25		002	8486	002	29		632							
	0 EV	4	OBS	0012		415		640	25							632							
		_	STD	0020		077	32		25		002	0217	005	9		495							
	1 /	4	OBS	0025		074		747	26		001	/257	00-	٠,		432							
			STD	0030		091	321		26			6357	00		144								
			STD	0050		134	330		26		001	4536	010) 2		411							
	1 (4	085 STD	0050 0075		134 128	33	029	26 26		001	3341	013	27		411 421							
		,		0075		128		185			001	JJ41	01.	, ,		421							
	1 /	4	OB\$ STD	0100		128	33		26 26		001	2479	016	60		421 428							
	1.7	7.6	085	0100		124		297	26		001	27/7	016	,		428							
	17 17 17 17	7	STD	0125		128	33		26		00.1	1741	019	90		432							
			STD	0150		131	33		26			0965	022			436							
	17	4	085	0150		131		488	26		501	0,00	,,,			436							
	17		085	0180		106		630	27							455							
			STD	0200		033	33		27		000	8726	02	77		495							
	1 7	7.4	085	TO213		038		012	27		0.00					532							

fle	NCE	SHIP					- F	MARS		STA	ION TI	ME			QUGIN.			DEP	114 4	MAX. DEPTH		SERVA		WEA		DUD	1		NODC
	10. NO.	CODE	LATITU	DE 1/10	LDNGIT	17/10	D X	10"	1		DAYTH	1/10	TEAR	CHUISI		OITATIO NUMBI		5011		DF	1		PER SE	ممت لـــــ		I AMI	1		UMBER
11	260	EV	5345		0534			186	33	07	24	88	1968	ĻĮ		343		020	_	02				X1	\neg	6			0020
								-	WA	7	V	SPEED	BARC)- 	AIR TEA		VII.				CIAL								
									COLOR	TRANS	DIL	POICE	M ETE (mae		DRY	ME		DEP		BSERV	ATIONS								
											21	512	04	1 (83	07	8 8	0	8			<u></u>							
		MESSENGE TIME HR 1/10	CAST NO.	CARD	D	EPTH 1	m I	,	₹	s	٠/.	SIGA	AA-7		- VOLU		₹ △ D DYN, A ∓ 10 ³	۸. ا .	SOUN VELOC		0; =1/		04=P - 41/1	707AL-		2-N - ot/1	NO3=N µg = at/1	\$1 O 4=\$1 98 - 01/1	
				ST) D	0000	0	0:	558	32	10	25	34	00	2646	2	0000		146	95								1	l
		188	1	0B\$		0000			558 496		100 14	25 25		00	2550	5	0026		146 146										
		188		511 085	-	0020		-	434	32	180	25 25		00	2458	8	005		146										
		106	,	S T	0	003	0	01	000	32	85	26	39	00	1640	3	007	2	144	68									
		186		OBS		003			103		023	26							144										
		188	3	085 ST		004			133 132		160 17	26 26		00	1346	0	010		144	_									
		186		085		007			119		347	26			-			_	144	27									
				ST		007	5	-0	119	33	36	26	85	00	1202	8	013	3	144	27									
				ST		010	0	-0	116	33	49	26	96	00	1102	6	016	2	144	35									
		188	3	085		010	3	-0	116	33	508	26	97						144										
				ST	0	012	5		102		59	27		00	1029	7	018		144										
		188	3	085		014			055		746	27							144										
				51	_	015			046		77	27		00	0913	8 8	021		144										
		180	3	085	T	018	6	0	108	34	187	27	41						145	61									

REFERENCE SHIP	LATITUDE	/10	GITUDE 1/10		SDEN JARE	4	GMT	TIME II HR,1/10	YEAR	CRUISE NO.		OR'S TION MBER		DEPTH TO BOTTOM	MAX. DEPTH DF S'MPL"	085	WAVE SERVATION	WEA- THER CODE	CLC CO	DES		NODC STATION NUMBER
311260 EV	53442		3554W		33	07	24	202	1968					0190	02	_18	2 2	X 1	6	7		0021
					COLOR	,	+	WIND	METE	J-	IR TEMP		VIS.	NO. DBS.		CIAL						
					CODE	IMI	DIR	1010	1			IULE	-00	DEPTHS	Olisex	A IIIDAS						
							23	510	04	1 0	83	72	7	0.8								
MESSENGR TIME HR 1/10	CAST	CARD TYPE	DEPTH V	m) 1	τ	s	٠/	sig	MA-T		VOLUMI	DY	△ D N. # 103		UND	0 2 ml/l	PO 4=1	0 TA L = P g = q1/l	NO2		NO3=N ug = at/1	
, –		STD	0000	0 0	585	31			17	002	8092	06	000		704							
202	2	085	0000) (1585	31	923	25	17						704							
		STD	0010) (1516	32			34	002	6466	00	27		679							
202	2	085	0019		1392		253		63						631							
		STD	0020		151	32			16	001	8597	00	050		532							
202	2	OBS	002		035		001		53						453							
		STD	0030		0057	33			60		4409		966		445							
		STD	0050		117	33			82	001	2354	0	93		424							
20:	2	085	005		119		326		82		1076	_	1		423 424							
		STD	0079		130	33			95	001	1075	U	122									
20;	2	085	007		130	-	489		96			_	1		424							
		STD	0100		121	33			04	001	0245	0	149		434							
20;	Z	085	010		120		593		04			_			434							
		STD	012		0079	33			19		8779		173		460							
	_	STO	0150		0004	33			25	000	8271	Ü	194		501							
20		OBS	015		0003		920		25					1.0	504							
20:	2	OBS	T018	5 () 159P	33	92	1 27	716P													

IO.	SHIP	LATIT	uot	LON	GITUOE	OC 18	M/ RS		TAT	ON SMT		YEAR	CRUISE	ORIGIN	ATOR"		1 1	PTN	MAX, GEPTH OF	08	WAVE TAVAS		WEATHER	CO	2300		5	NOOC
NO.	COOE	•	1/10		17/10		10*	1.	CM	ΑY	HR,3/10		NO.		NUMBI		801	MOT	S'MPL"	S DHL	HGT PI	8 5E/	COOL	TTPL	AMT		- N	UMBER
1260	EV	534	1 1 N	054	4111w		186	34	07 2	4	216	1968	LIP	10	345		01	81	02	17	2 z		x1	6	7			0022
							[WA	T k		WINO	BAR	o. [AIR TE	MP. C	VIS		0.	528	CIAL								
								COLOR	TRANS.	DIR.	SMED	7		ORY	BUL	cot	(a) ()	DS. PTHS	OBSERV									
										20	\$10	04	1 C	89	07	8 7	0	8			<u> </u>							
	MESSENG TIME HR 1/10	e NO.		RO IPE	DEPTN	(m)	1	₹	s	٠/	sig	MA-I		C VOLU		₹ ∆ 0 0 t N . 7 x 10 ³	и.		OCITY	02 ml/	1 +0.	=P q1/l	101A L-F #2 * 61/1			NO3=N +3 - et/l	51 O 4 = 51 Hg = 01/1	
			1		222	^	2		234		35	- 1	007	744		0000		1.6	685						1			İ
	21		08	TD	000		-	540 540	319		25		002	766	7	0000	,		685									
		0		TD	001			440	320			40	002	584	5	002	7	14	647									
			s	TD	002	0	0	273	325	7	25	99	002	2024	2	005	0	14	585									
	21	6	08		002			273	325			99							585									
	21	6	08		002			165	330			42							544									
				TD	003		-	059	33:			60	00	1448	1	006	7		499									
	21	6	9.0		003			027	337			73						_	462									
				TD	005			061	33			84	00	1216	6	009	4		450									
	21	6	OB		007			084	335			97					,	_	445									
				TD	007			077	335			99		1070 1965	_	012			449									
				TD	010			045	33			10			-	-			492									
				TD	012			012	338			21	000	863	4	017	1		497									
	2 1	6	08		013			005 155	334			23 45	000	0644	1	019	^		578									
				TD	015								000	J O44		019	U		597									
	21		90	-	016			192	34			50																
	21	6	9.0	35	1017	•	U	198	34	988	2 (751						14	602									

FERENCE SHIP COOE LATITU	0E LO	ACITUDE POR	MARSOEN SOUARE	STATION TO	YEAR	ORIGINATO CRUISE STAT NO, NUA	10 N	DEPTH DEPT. TO OF	0858	WAVE RVATIONS	WEA- THER CODE	CLOUD CODES		51	NODC TATION UMBER
11260 EV 5336	6N 05	429 W	186 34 WAT	07 24 2	INO BAR	A 10 75 44 9		0180 02 NO. SP	19	2 3	X 1	7 7			0023
			COLOR	TEANS OIR.	FORCE (mb		FT CODE		ZHORAV						
				21	\$08 04	1 072 0	67 8	08							
MESSENGR CAST TIME OF NO. HR 1/10	CARO	OEPTH (m)	1 %	s •/.	SIGMA-1	SPECIFIC VOLUME	₹ ∆ 0 DYN, M. x 10 ³	AEFOCILA 200NO	02 ml/1	PO4=P vg = 61/1	101AL-P #g = e1/1	NO2-N vg - 01/1	NO3-N vg = 01/1		
	670	0000	0513	23.02	2517	0038035	0000	16473							
231	STD 085	0000	0513 0513	3183 31826	2517 2517	0028035	0000	14673 14673							
231	STD	0010	0500	3186	2521	0027639	0028	14670							
231	085	0015	0494	31880	2524	002.037	0-20	14669							
	STD	0020	0242	3228	2579	0022186	0053	14567							
231	085	0025	0055	32591	2616	•		14489							
	STD	0030	-0016	3276	2633	0017020	0072	14459							
231	085	0040	-0123	33036	2659			14415							
	STD	0050	-0124	3314	2668	0013713	0103	14418							
	STD	0075	-0127	3335	2684	0012094	0135	14423							
231	085	0075	-0127	33348	2684			14423							
	STD	0100	-0113	3350	2697	0010930	0164	14436							
231	OBS	0100	-0113	33504	2697			14436							
	STD	0125	-0069	3370	2711	0009582	0190	14464							
231	STD 085	0150 0150	-0031 -0031	3385 33847	2721 2721	0008619	0213	14487 14487							

TERENCE TER ID. TOT NO.	SHIP CODE	LATITU	DE 1-10	LONGITUDE 38	5QU			TIÓN IG M T		TEAR		JISE 1	ATOR'S STATION NUMBER		0 E P T TO 80 T T O	0	MA1 EPTH OF MPL'S		WAV SERVAT	TIONS	_	MER DOE	co	DES			NODC STATION NUMBER
311260	ΕV	5250	0 N	054060W		24	- F R		WIND	1968	0-	IP 10	347 MP. C	VIS	030 NO.		03		1 3	9		x 1	7	6			0024
						CODE	(41)	-	FORCE		_	\$014	1011	+	OLPIT	45											
								26	507	08	Γ,	083	07	<u>2 7</u> ε Δ ο	10				4				_	-			_
	MESSINGS TIME NE 1/10	% NO.	C 4.81		Į t	**	5	٠/, .	SIGN	M A −1		CIFIC VOLU		x 10 ³		ELOC!		0 g m1/1	, ,	4-P - a1/1	#01A	01/1	NO 2		NB - 41/1	\$104= #8 = 01	
			ST			594	31		25		0	02790	2 (0000		470	-										
	0.3	6	085			594 594		962 97			^	A2782		0028		470											
	0.30	4	\$1 085			594		91 967		19	U	02787	4 (JU 2 6		471											
	0.51	•	51			207		66		12	٥	01905	1 (0051		455											
	0.36	6	089			207		660		12	٠		•			455											
			ST			026		99		52	0	01519	7 (068		445											
	03	6	085	0030	-0	026	32	993	26	52					1	445	8										
			ST			115		25		76	0	01588	2 (097		442											
	0.3	6	085			115		252		76						442											
			\$ 1			114	33	_		89		01166		127		443	-										
			\$1			112		55		00	0	01061	2 (155		443											
	0.3	6	085			112 087		546 67	27	00	^	00074	,	. 1 . 1		443											
			51 51		_	066		76	27			00974)181)204		447	-										
	0.3	6	085			066		756			U	00713		, = 0 4		447											
	0.3		085			035		852		22						449	-										
		_	\$1			034		85		22	0	00853	9 (246		449											
			51	D 0250	0	024	33	97		29	0	00793	6	290) 1	453	31										
	0.3	6	089	0279	0	057	34	041	. 27	32					1	455	52										
	0.3	6	085	T0291	0	087	34	125	27	37					1	456	8										

REFERENCE	SHIP					= 1/2	SOEN	STA	10N	TIME			OPIGE	NATO	2 °5		DEPTH	DEPTH		WAY			WEA-		OUD			NOOC
CIET ID.	CODE	LATITU	1/10	LONGI		₹ 10.	ARE		(GA-T)	HR.1/10	YEAR	CRU N(STAT			TO BOTTOM	0.5	1 0	SERVA HGM			CODE	CO	OES			TATION:
+	-					-	1	- $+$				+				-		1	-	-					T	_		
311260	EV	5253	5N	0535	07W	186	23 WA			052 J	1968	11	P 1 (034		-1	0455	04	2 2	2	3	-	Хl	7	6			0025
							CUTOR	1		59610	BARI M ET		DRY		ET	VIS.	NO. 085.		CIAL									
							CODE	imi	OIR.	FO#C	7-1		8018		JLB	000	DEPTHS	OBZERA	* IION S									
									26	507	09	5	083	0	79	7	10											
	WESSENG		CAR	20				Τ.		1		SPEC	INC VOL	UME	\$.	20	soi	JND	-	PC	4-9	101	A (= P)	NO.	_1,	NO3-N	5104-5	
	1/ME HR 1/1	of NO	TYE		DEPTH (m)	'	τ.	7	•/••	SIG	M A -1		0 M A 1 F			103		OCITY	D ₂ ml		4.85			na -		yg = 81/1	yg - at i	
	1011	-		-				+		1							+			-					_			+
			5	TD	0000	0	500	31	89	25	24	0.0	274	0.3	റാ	000	14	669							-			1
	0.5	2	08		0000		500		892		24	•		•	•	•		669										
				TD	0010	C	1495	31	88		24	0.0	274	34	00	27	14	668										
	05	2	0.8	S	0010	C	495	31	882	25	24						14	668										
			5	TD	0020	C	072	32	47	26	05	0.0	196	88	00	51	14	494										
	0.5	2	OB	5	0020	C	072	32	466	26	05						14	494										
			S	TD	0030	C	0071	32	84	26	35	00	168	01	00	69	14	500										
	0.5	2	08	S	0030	(0071	32	844	26	35						14	500										
			5	TO.	0050	-0	135	33	04	26	60	00	144	57	0.1	00	14	411										
	0.5	2	08	5	0050	-(1135	33	039	26	60						14	411										
			S	TD	0075	-0	130	33	21	26	73	0.0	131	43	0.1	135	14	420										
			S	TD	0100	-0	124	33	35	26	84	0.0	120	81	0 1	67	14	429										
	0.5	2	08	5	0100	-0	124	33	349	26	84						14	429										
			S	TD	0125	- 0	118	33	45	26	92	00	113	12	0.1	96	14	437										
			5	TO.	0150	-0	112	33	56	2.7	01	00	105	16	0.2	223	14	446										
	0.5	2	OB	5	0150	-0	112	33	555	27	01						14	446										
			5	TD	0200	- 0	1050	33	78	27	17	0.0	090	28	04	72	14	486										
	0.5	2	0.8	5 1	10201	-0	0048	33	785	2.7	17						14	487										
			S	TD	0250	(112	3 3	98	27	24	00	0084	30	03	16	14	571										
			5	TD	0300	(233	34	16	27	29	00	080	17	0.3	357	14	635										
	0.5	2	0.8	5 1	10312	(255	33	78P	26	97P																	
			5	T D	0400		343	34	43	27	41	00	070	76	04	+32	14	703										
	0.5	2	08	5 1	10425		1343	34	479	27	45						14	708										

REFERENCE	EMIR					9// 1		STATIO			(DEGINA	TO #15		DEPTH	DEPT			AVE		WEA-	Cron		HODG	
TET 10.	CODE	LATITU	1/10	LONGITUD		7	1	IGA M D T DA		YEAR	CRUISE NO.		ATION SEML		TO MOTTOM	0.6	,		GE PIE		COOE	CDD:		NUMBE	
-+					-	10"	1				1			_		+	_	_	1	11.		7		003	_
311260	EV	5256	5N	053357	W J	186	23 WA		WIND	1968	1	103		- l'	0528	0 5	5 1	7 1	L 2		X1	'		002	. 0
							CODE		SPEE	7 13	ER C	DRY ULB	WET	V12 0008	OBS. DEPTHS	0.055.0	ECIAL VATION	15							
								2	4 50	9 09	5 0	61	056	6	11										
- 1	MESSENGE TIME of the Part of t		C A R		H (m)	1	℃	s */	510	SMA-T		VOLUM ALT-EIS	E S	A. D.	SDI	UND	03 m	d/I	PO4= FE • 81		OTAL-7	NO2-1			н
																				1				ĺ	
			ST	-	00		364	3091	_	460	003	3514	00	000		598									
	07	1	OBS		00		364	3091		460						598									
	^ 7	,	ST		10		351 351	3152 3151		509 509	002	8812	00	031		603 603									
	0 /	1	0B5		20		323	3170		526	002	7235	- 00	059		594									
	0.7	1	089		20		323	3169		526	002	1237	0	,,,		594									
	0 1	1	ST		30		025	3289		642	001	6191	0.0	81		480									
	0.7	1	085		30		025	3289		542		/-	•			480									
		•	ST		50		111	3315		668	001	3714	0	111		424									
	0.7	1	OBS		50	-0	111	3314		568					14	424									
			ST		75	-0	001	3359		599	001	0739	0	141	14	485									
			ST	0 01	00	0	083	3393	2	721	000	8637	0	166	14	532									
	07	1	OBS	01	00	0	083	3392	6 2	721					14	532									
			ST	D 01	25	0	128	3409	2	732	000	7685	0	186	14	559									
			5 T	D 01	50		171	3425		741	000	6822	0	204		584									
	0.7	1	085		50		171	3424		741						584									
			51		00		250	3449		754	000	5625	0	235		630									
	0.7	1	083		00		250	3449		754						630									
	071 071		51		250		284	3459		759		5203		262		655									
	. ~		\$1		100		313	3468		764	000	4803	, 0.	287		677									
	07	1	085		00		313	3468		764	000			2 2 2		677									
	0.7	,	SI		00		357 358	3482 3482		771 771	000	4302	. 0.	333		714									
	07	r	085		00		361	3486		774	000	4128		375		733									
	07	1	0B5	-			361	3486		774	000	4170	, 0	- 13		734									
	0 /	1	003	, 10:	. 10	U	201	240C	2 6	. / 4					14	134									

FERENCE SHIP	LATITUDE 1/10	LONG	11/10		ISDEN JARE		DN TE		YEAR	CRUISE NO.		DR'S TIDN MBER		DEPTH TO BOTTOM	MAX DEPTH OF S'MPL"		DBSER	VAVE	WE TH CO	ER	CLOUI CDDE	5		NODC STATION NUMBER
11260 EV S	53004N	053	180w	186	33 WA		5 0	087 1	968	IIP	103		_	0549	05	1 2	2	1 2	X	1	6 7	ĺ		0027
					COLDR		DIR.	SPEED	M ETE (mbs		RY	W E T BULB	VIS.	DEPTHS	SPE OBSERV	CIAL /ATID	NS							
							25	510	105	-+-	-	061	7	11			-							
MESSENSE TIME OF HR 1/10	CAST CAP		DEPTH (m	1	2 1	s	٧	SIGM	A-1		VOLUMI	DY	△ D N. M 10 ³		OCITY	D ₂	m 1/1	PO4-	101A L		102-h	ND ₃	\$1 O 4 − 5 u 2 − o b	
087	_	TD	0000		418	313		249		003	0612	00	000		627									
067	08:	S TD	0010		529	313		249 251		003	. 76 2	0.0	30		627									
087	08:		0010		1529	317		251		002	B 753	00	130		680 680									
087	ОВ:		0019		528	319		252							685									
331		TD	0020		511	320		253		002	5197	00	57		679									
087	0В:		0028		413	326		259		002					647									
		TD	0030		417	327		260		002	214	00	80		650									
087	OB:	S	0047	C	420	334	88	265							664									
	S.	TD	0050	C	401	335	2	266	3	001	4204	0 1	115		557									
	S.	TD	0075	C	257	337	8	269	7	001	974	0 1	146	14	603									
087	OB:	S	0095	C	164	323	5 P	259	0P															
	S.	TD	0100	C	134	339	9	272	3	000	3478	0.1	171	149	556									
		TD	0125		037	341		274	2	000	5667	0 1	189	149	519									
087	0B:		0142		019	342	-	275						149	514									
	_	TD	0150		050	342		274		000	981	0 2	205		530									
087	08		T0190		180	343		274	_						596									
		TD	0200		198	343		275			5027		235		606									
0.07	_	TD	0250		276	345		276		000	5131	0 4	63		651									
087	OB.	5 TD	0294		324	347		276							681									
087	08:		0300 T0396		328	347		276	_	000	4453	04	287		584									
087		5 T0	0400		366	349		277		000	3653	0.3	120		718									
													28		719									
	C .	TD	0500		360	349		278			3573		364	14										

NCE	SHIP				147 85 SQU		STAT	ION GMT	TIME		_	ORIGIN			DEPTH	MAT.	0	WAY	vt LTIONS			CLDUC			NDDC
NO.	CODE	LATITUD	1/10	ONGITUDE BY	10*	1.	N D [C W			YEA#	CRUISE NO.		TATIO		ID IDTION	0.1			PER 5		201	CDDE			TATION
_	5					1					+	 		_	0497	+	-	+-+	2						
260	EV	53040	JN U	53006W	186	33		25	104	1	1	10				1	19	11	4	,	(1)	6 6		1	0028
						CODE	TRANS.	Dik	1 SPI	ILO MET	te -	DXY	WE	7 0001	NO. OBS. DEPTHS	DESCEN	CIAL ATIDHS								
								24	51	0 10	2 0	61	05	6 7	11			1							
- 1	MESSENGE TIME HR 1/10	CAST ND.	CARD	DEFTH (m)	T	τ	5	٠/	s	IGMA-T		VOLU		₹ ∆ D D1N, M x 10 ³		UND	0; ml/		D4-P	101A		03-N - 01/1	ND3=N +9 = 01/I	\$1 04-\$4 #8 • 01/1	
			STD	0000	0	335	31	48	2	2507	002	896	8	0000	14	593									
	104	4	OBS	0000		335		480		2507			_			593									
	• • •		STD			283	31			539	002	591	9	0027		577									
	104	•	085 STD	0010		283 096	31			539 647	001	564	2	0048		577 423									
	104	4	0BS	0020		096		902		647	001	, , , , ,	2	0040		423									
	104		085	0029		142		091		664						405									
			STD			142	33	10		665	001	398	5	0063	14	406									
	104	4	OBS	0049	-0	133	33	326	, 2	683					14	416									
			STD	0050	-0	133	33	33	2	683	001	223	1	0089	14	416									
			STD	0075	-0	121	33	48	2	695	001	110	1	0118	14	428									
	104	4	085	0098	-0	111	33	644	. 2	708					14	439									
			STD	0100	-0	101	33	67	2	2710	000	970	1	0144	14	444									
			STD	0125	0	003	33	93	2	726	000	815	9	0167	14	500									
	104	4	OBS	0147	0	073	34	116	, 2	2737					14	538									
			STD	0150	0	078	34	13	- 2	2738	000	706	1	0186	14	541									
	104	4	085	T0197		154	34	386		754					14	586									
			STD			159	34		- 2	2754	000	1557	8	0217		589									
			STD	0250	0	230	34	59	2	764	000	473	0	0243	14	631									
	104	4	OBS	0295	0	281		732		2771						663									
			STD			286	34			2771	000	412	8	0265		666									
	104	4	085	0394		347		916		780						710									
			STD			349	34			780	000	339	7	0303		712									
	104	4	OBS	0493	0	363	34	993	3 2	2784					14	734									

EFERENCE	SHIP				- =	11/2		STAT	ION T	IME			ORIGINA	107		DEPTE		V A I DEPTH		Vi A			4 { A -					NDOC	
10. 05 NO.	CDDE	LATIT	1/10	LONGITUDE	10 4	10*		N 0 1	GMTH	0 1 10	YEAR	CRUISE ND.		TATIO		10 10110		OF MALS			TION		THER	co	DES			STATIO	h
+	·	6207						-						_								112		,					-
311260	EV	5307	/ DN I	052428	d i	186	32 WA	07		121]	1968		103			045	9	04	19	1	3	- 1	X 4	×	9			002	9
							Chiar	,	1	SPELD	MET	0	027	WE1	VIS.	NO.		SPEC	IAL A TIONS										
							CODE	imi	D19.	POPCI			ULB	IUL		DEFTH	+5		110143										
									24	510	10	5 0	72	06	7 3	12													
	MISSING	E CAST	C / 8	D DEPTE		Τ.	70	1				SPECIFIC	VOLUA	.,	₹ ∆ Þ	so	OUND	D		,	04-9	10.	A P	NO.	- 44	NO1-N	510	t.	Т
	HR 1/1	° NO.	TYP		(m)	'	-	,	٠/	3161	MA-T	ANOM	A LT-410	,	DYN. M x 10 ³		ro CI		02 71					y1 = 0		23 - 01/1	VS - 01		М
	-		1				-	+						_			_			+		+			-				_
	1		S	rp 00	0.0	0	327	31	2 2	24	96	003	006	7	0000	1.	458	9.9							- 1			1	
	12	1	08:				327		326	24		003		•	•		458	-											
		•	S				317	31		24	-	002	983	7	0030		458												
	12	1	OB:	00	10	0	317	31	346	24							458												
			5	00 O	20	0	249	31	77	25		002	608	7	0058		456												
	1.2	1	083	00	20	0	249	31	772	25	38					1	456	53											
			5	rD 00	30	0	236	33	15	26		001	5554	4	0079	1	457	78											
	12	1	OB:	0.0	34	0	218	33	520	26	60					1	457	76											
			5	TD 00	50	0	004	33	58	26	98	001	0844	4	0105	1	448	83											
	12	1	OB:	5 00	58	-0	050	33	669	27	08					1	446	6 l											
	1 2		OB:				061		711	27							445												
	1.2	1	083				053		754	27							446												
			5			-0	035	33	79	27	17	000	9056	ь	0130	1	447	72											
	1.2	1	08:				017		821	27							448												
			5.				043	33		27			807		0151		451												
			5				106	34		27			7236		0171		455	-											
			S				160	34		27		000	655	2	0188		458												
	121 121 121 121 121 121	1	OB:				176		310	27							458												
				TD 02			234	34		27			564		0218		462												
			5				292	34		27		000	505	I	0245		465												
		1	OB				294		626	27					• 7 4 =		466												
			5				340	34		27		000	457	ī	0269		468												
		1	OB:				357		796	27		000		_			470												
		. 1	S.				362	34			72	000	4229	4	0313		471												
		1	08;	5 104	4 U	U	364	34	858	2.7	13					1.	472	4											

IO. NO.	SHIP		ATITUDE 1/10	1	GITU 0 E	PHDC18		SOEN LARE		ION THE		FAS	CBUISI NO.	5	ATOR'S TATION LUMBER		DEPTH TO BOTTOM	081	AX. PTH DF IPL'S	OBS		PIR 1	1	/EA+ HER OOE	CLO	€5		5	NODC TATION UMBER
260	EV	5	3104N	052	248W		186	32	07	25 1	36 1	968	116	10	353		0430		04	19	1	3		x 1	6	6			0030
200		1 -	220414	, 030				WA			IN O	BARC	1	AIR TE		J	NO.	Ť.	SPECIA										
								COOE	TRANS.	DIR.	PRED OF FORCE	METE (mbs	R	DSY	W ET	CODI	OBS. DEPTHS	0.65	ERVAT										
										24	508	11	2 0	83	072	8	11				_					, .			
	MESSEM 11ME HR 1/	9,		ARO YPE	DEPTH	(m)	'	15	5	٠/.,	SIGMA	1-7		C VOLU	20	A D		OCITY	. 0	7 ml/1		04=P - 41/1	1014		NO2-		03=N - et/1	\$1 O4-\$4 #2 • et/l	рн
			Ι,	TD	000	0	1	582	31	0.4	251	_	00.3	794	- 5 n	000	14	703	3		I		Į	ı		ı			1
	1.3	36	08		000			582		938	251		•••	. , , ,	, ,			70											
		36	ÖE		000			1592		095	252							71											
	•	-0		STD	001			528	32		254		00	2531	8 0	027		686											
	1:	36	OE		001		-	154		057	264		•				14	539	9										
	•			STD	002			153	33		265		00	511	4 0	047	14	539	9										
	1	36	0		002	8	0	142	33	583	269	0					14	542	2										
	-	- •		STD	003	0	О	112	33	60	269	4	00	128	6 0	060	14	529	9										
	1	36	08	35	004	7	-0	0041	33	742	271	3					14	464	4										
			,	STD	005	0	-0	0029	33	79	271	7	000	908	9 0	080	14	47	1										
	1	36	01	3.5	007	0	C	045	34	012	273	1					14	51	1										
				STD	007	5	C	061	34	04	273	2	000	764	0 0	101	14	520	0										
	1	36	01	3 S	009	4	C	116	34	142	273	7					14	154	9										
				STD	010	0	C	130	34		273	9	000	701		120		55											
				STD	012	5	(179		32	274		000	630	6 0	136		158											
	1	36	01	85	T014	1	C	201	34	378	274	9					14	159	8										
				STD	015	0	C	205	34	38	274	9	000	0606	1 (152	14	60	1										
	1	36	0	BS	T019	0	C	222	34	417	275	1					14	661	6										
				STD	020	0	(226	34	42	275)595		182		61											
				STD	025	0	(247	34	47	275	3	00	o 577	8 (211	14	63	7										
	1	36	0	B \$	T029			270		540	275							465											
				STD	030	0		275		55	275			0545		239		465											
				STD	040			349		81	277		000	0433	2 (288		+71											
		36	0	BS	T040	0	- (349	34	805	277	ή.					14	+71	Λ										

REFERENCE	SHIP	LATITUOE	LON	GITUDE	DCT.	AZ RS		STA	TION		Ι,	EAR		ORIGIN			OEPT		MAX. DEPTH	08	SERVA	VE NTIONS		WEA-		000			NODE
ODE NO.	CODE	1/1	1	1/10		10*		CM	OAY	HR,1/		• • • • • • • • • • • • • • • • • • • •	CRUIS		STATIC NUMB		80110	F	OF S"44 PL"S	D18.	HGT	P(8 3	ΕA	CODE	1491	AM1			NUMBER
31126	0 EV	53130N	052	2069W	1	86	32	07	25	152	1	968	11	10	354		069	5	06	19	2	2		X 1	7	6			0031
3.1.20	0, 2, 1	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,			[WA		Ť	WINC	_	BARC		AIR TE	_		NO.	. T	SPE	141] .								
							CODE	TEAN (m)	S. DIR	- -	ED 10 10 E	M ETE (mbs	R	DRY BULB	w g		OBS			ATIONS									
									22	5 1	0	12	2	378	06	7 7	11												
	MESSENG TIME HR 1/10	9 NO.	TYPE	OEFTH I	m)	1	t		s ·4.		iG A4	A-1		IC VOLI		Ž △ D DYN ¥ x 10 ³		ELOC		0 2 ml/		O ₄ -P • 41/1		fA L=P + α1/1	NO:	2 ← N at/ I	NO3-N V9 + dl/l	\$1 04 - 5 ug - 61	
			STD	000	,	0	657	2.2	234	١.	254	0	00	2582		0000	١,	47	30										
	15		85	000			657		339		54		00	2 3 0 2	. •	0000	_	47											
	1,	-	STD	001			568		42		55		00	2418	13	0025		47											
	15		85	001		-	386		780		60		••					46											
			STD	002			259		306		64		00	1640	9	0045	1	45	85										
	15		88	002	3	0	152	3.3	3296	5	66	6					1	45	42										
			STD	003	0	0	012	33	343	- 2	68	6	00	1203	31	0060) 1	44	82										
	15	2 0	BS	004	7	-0	023	33	3777	7 2	71	5					1	44	73										
			STD	005	0	0	046	33	385	- 7	271	8	00	0900	2	0081	. 1	45	06										
	15	2 0	BS	005	6	0	133	3 3	3961	1 2	72	1					1	45	48										
	15	2 0	BS	007		0	860		3988		72							45											
			STD	007			073		01		272		00	0793	8	0102		45											
	15	2 0	BS	009			101	_	+09		273							45											
			STD	010			124		14		273			072		0121		45											
			STD	012			206	_	431		274			065		0138			96										
			STD	015			264		446		275		00	0594	+9	0154			28										
	15		85	T015			264		4459		275							_	55										
	15	12 0	85	018			306 312		463° 466		276 276		00	0490	٠.	018		-	60										
			STD	020			332		473		276			0460		020		-	77										
			STD	030			347		479		276			0434		022			93										
	15		BS	T037			362	_	484		277		00		• •	U= Z			112										
		· c						_	_		277		~~		20	026			116										
			STD	040	0	റ	362	- 11	485					041															
			STD	040 050			362 359		485 487		277			041		031			732										

10. NO.	SNIP	LA TITU	DE 1/10	LON	GITU DE 1/10	3 8	0 4 4 51 50 U A 10*			ION TI		TE A P	C≇UIS NO.		STAT NUA	IION	DEPT TO 80110	01	H 08		VE A TIONS	WE. THE COL	• C	000	1		NODC STATION NUMBER
260	EV	5314	4 N	051	1574W	1	86	31	07	25 1	72	1968	116	10	35	5	131	7 12	2 20	2	3	x	7	7			0032
								WA			IND	BARG		AIR TE		₹	NO	7		1		` ^	• •	•		,	00 32
								colos	TRANS	Dik.	3410	METE		027		VET COI		CATEA	ECIAL VATIONS								
							-	C008	-	-	PORCE	(mbi		BULB	1	ULB	+			-							
										25	508	12	2 (083	0	78 7	13										
	MESSENGE TIME		CAR	0	DEFTH W	.	1	*		٠/	1104	A — T		c vou		₹ ∆ t		OUNO	02 ml/		04-6	TOTAL-	P NO	,h	NO3-N	\$10	2
1	HR 1/10	NO.	1 1 2	E	U(FIR (A	"			1 ,	•••	3104		ANO	MALT-E	107	1 10 ²	' VI	LOCITY	02 MI		9 = 81/1	28 - 81/			µg • at/1	µ3 - 61	
i																	-			_			_			_	+
- 1		1)	ST	n l	0000	, '	0.5	71	31	30	24	74	001	3194		000	, 1	4691		- 1			1			l	1
	172	,	085		0000			71		388	24		00.	,,,,	, ,	000		4691									
	• • •	-	ST		0010			321	32		26		00	1782	'n	002		4609									
	172	2	085		0018			80		568	26				•			4557									
			ST	D	0020)	01	54	33	50	26	91	00	1155	4	004		4546									
	172	2	085	,	0025			99	33	576	27	00					1	4524									
			ST		0030			62	33		27		001	1015	6	005	-	4508									
	177	2	085		0045			27		848	27							4497									
			ST		0050			58	33	-	27.		000	0861	. 1	00.6		4513									
	172		085 085		0060			103		034	27.	_						4536									
	17.	2	ST		0075			137	34		27 27		000	705		008		4545 4556									
			ST		0100			84	34		27			598		010		4583									
	172	,	085		0100			64		366	27		•		• •	00		4583									
	• • •	•	51		0125			234	34		27		000	552	6	011		4611									
	172	2	085	;	0149	•	0.2	71	34	590	27	61	• • •			• -		4633									
			ST	D	0150)	0.2	272	34	59	27	61	000	500	1	013	31	4633									
	172	2	089		T0199			316		780	27							4663									
			\$1		0200			316	34		27			0403		015		4663									
			\$1		0250			325	34		27			390		017		4675									
			51		0300		_	333	34	-	27			379		019		4688									
	17;	,	0B3		0400 T0476			350 363	34	959	27 27		000	355	8	023	-	4712 4731									
	17.	2	51		0500			363	34		27		000	340	٠.	026		4735									
			51		0600			362	34		27			340		030		4751									
			ST		0700			362	34		27			349		033		4768									
	172	2	085		T0760			361		974	27			,				4777									
			ST		0800			361	34		27		000	349	3	036		4784									
			ST	D	0900	ı	03	60	34	98	27	3 3	000	356	7	040	5 1	4800									
	172	2	085	•	0954			159	34	983	27	34					1	4809									
			ST		1000			59	34		27			357		044	-	4817									
			ST		1100			358	34		27		000	364	3	0476		4833									
	172	2	085	5	11199)	03	358	34	996	27	35					1	4850									

4CE	SHIP	LATITU	DE	LOA	4GITUDE	1000	50U		51 A 710	N TIM	E	TEAR		ORIGIN	_		06919	OEPTI		WAVE SERVATIO	ns.	WEA	CLOUD			NODC	
1D.	CODE		1/10	201	1/10		10*	1 1-	ALD CH		/10		CRUIS NO	S N	TATE		\$0110	M S'MPL		HGT MA		CODE	11PE 4-0			TATION UNBER	
2	5			2.						-1-			_	+						++-	-			-	_ +		
260	EV	5315	5N	05	1478₩	1 1	86	31	07 2	1 E		1968	11	P 10			173	7 15	22	2 3		X1	1 7 7			0033	
							-	COLOR			SMED	BAR		DRY	WI	VIS.	NO.	SP	ECIAL	i							
								COOL	TEANS.	O'R.	OICE	tmb		RULB	8U		OLPTH	SOBSER	VATIONS								
							- 1			_		1.7	-	202	_	70 0		1									
١					1				1	26 9	80	12	4 '	083	٠,	78 8	14	1		1	Т.						_
ſ	MESSENGE TIME		CAR		DEPTH (n)	Ť	℃	5 .	4.	SIGN	1 A A		MALT-ET		₹ ∆ 0		OUNO	02 ml/	PO4-		0146-7	NO2-N	NO3-N	5104-5	р Н	
ļ	HR 1/10			`												x 103	7.6	LOCITY			21	g r 41/1	μ μ = 0 ξ/1	49 - al-l	₩2 = at/1		
		1		- 1					j																		
			S'	T D	0000	•	0 5	598	3150)	241	81	00	3144	1	0000	1	4704		,							
	188	3	08	5	0000)	0 9	598	3149	96	248	81					14	1704									
			S.	TD	0010)	0 5	526	319	1	252	22	00	2755	7	0029	1	4681									
	188	3	08	-	0015			430	321		254						1	4645									
				TO	0020			294	3360		268		00	1261	8	0050		4608									
	188	3	089		0020			294	3359		268							608									
				10	0030			253	3399		27		00	0937)	0061		4597									
	188		083		0030			253 295	3398		27							4597									
	106	,		5 T D	0050			295 140	341		277		00	0716	,	0077		4620									
	188		08		0050			140	3416		273		00	0715	•	0077		4553 4553									
	100	,		10	0075			189	343		274		00	06474	4	0094		•581									
	188	1	08		0075			189	3430		274		00	00411	•	00,4		4581									
				TD.	0100			257	344		279		000	05808	А	0110		4617									
	188	3	089		0100			257	3446		27		-		•	0-10		617									
				Į D	0125			284	3456		279		00	05346	6	0123		634									
			51	TD	0150	1	03	808	3464	•	276	51		04976		0136		4649									
			51	T D	0200)	0:	345	347	7	276	58	00	04388	В	0160	1	4675									
	188	3	083	S	10201		03	346	347	75	276	58					14	4676									
				ro	0250			350	348		27		00	04179	9	0181		4686									
				T D	0300			354	348		27			04119		0202		4696									
				T D	0400			363	3487		27		00	03988	3	0242		4717									
	188	5	085		10402			363	3487		27		• •					4718									
	188		089	D	0500 T0597			362 361	3487 3487		277		00	04045	,	0283		4733									
	108	,		rD	0600			361	348		277		00	06111		0323		749									
			51		0700			359	348		27			04113 04184		0365		9750 9765									
	188		085		10796			356	3487		27		50	J-104	•	0,000		780									
		-		Ď	0800			356	3487		277		00	04242	2	0407		781									
			51	-	0900			351	3487		277			04298		0450		795									
			51		1000			48	3487	7	277			0436		0493		811									
	188	1	089	5	T1051		03	347	3486	3	277	75				_		819									
			51	rD	1100		03	348	3487	7	277	76	000	34404	•	0537	14	827									
			51		1200			349	3488		277		000	4400)	0581	14	844									
			51		1300			350	3490		277		000	04398	3	0625	14	+862									
			\$1		1400			51	3491		277			04387		0669		879									
			ST		1500			52	3492		278		000	04383	3	0713		897									
	188	l .	089	5	T1536		03	152	3497	8	278	30					14	903									

SHIP	LATITUDE	10	NGITUDE 2	301	ISDEN	STAT	ION TIM	· E	TTAR	CRI		STA	TION'S	\dashv	OEPTH TD	DEPTH		WAV SERVA	ve HONS		WEA-	CLD			,	NDOC
CODE	* 1/10		1710 0	10*	1"	MOII	DAY HR.	1/10			0.		MBER		BOTTOA	S'MPL	S Dat	HGF	PER S		CODE	119				UMBER
EV	53190N	05	126 W	186			25 2		196	8 1		03			2487	16	26	2	2		X 1	6	3			0034
					W.A.		1	SPEED		10-	A SE 1	_		V15.	NO. 085.	SPE	CIAL									
					CODE	TEAH!	DIE.	010101	AA E		OSA		W ET	CODI	DEPTHS	0.026.67	/A RONS									
							23	510	1	25	089		078	8	14											
MESSENGE PLME OF		ARD	DIPTH Imi		1 5	,	٠/	510.	4 A - T		IFIC VO		1 5	△ D.	50	UND	016	, Po	D4-P	101	A L-P	NO2-	-N	NO3+N	5104~5	T
HE 1/10	ND. 1	Y PE	J			'		110		A*	0 4 A L T -	-Elfis		103	VEL	DCITE	03 m1/		+ et/1		- 61/1	#g - 0		µg = 81/€	μg = mt/l	₽Ħ
																							_			1
		STD	0000		752	33	69	26	34	0	169	32	00	000	14	794		,			,		'		'	'
211	01	85	0000	(752	33	694	26								794										
		STD	0010		729	33		26	57	0	0148	06	0	16	14	790										
211		85	0015		669		021	26								768										
		STD	0020		537	34		26		_	0117		-	29		716										
21.		STD	0030		299	34		27		0	0092	09	00	40		618										
211		BS	0030 0038		299		057	27								618										
211		BS STD	0050		0134 0211	34	120	27			0065		~	55		548										
		STD	0075		330	34		27			0051			70		646										
211		BS	0075		330	-	638	27		•	,,,,	٠,	•	,,,		646										
		STD	0100		338	34		27		٥	0047	65	00	82		655										
		STD	0125		344	34	-	27			0043		-	94		662										
		STD	0150	(350	34	81	27			0041		ŏ	104		670										
211	01	BS	0150	(350	34	808	27	71						1 4	670										
		STD	0200		355	34		27		0	0038	87	0	124	14	681										
		STO	0250		360	34		27		0	0038	32	0	44	14	691										
		STD	0300		366	34		27		0	0039	29	0	163		702										
211		85	T0304		366		873	27								703										
211		BS	T0312		365		872	27								704										
211		STD BS	0400 10402)358)358	34	87 869	27		0	0039	41	0.	202		715										
211		STD	0500		359	34		27			0040	3.0	0.	242		715										
211		85	10597		359		877	27		J	JJ-0	90	0.	2		748										
211		STD	0600		359	34		27		0	0040	68	o.	83	_	749										
		STD	0700		357	34		27		-	0041		-	324		764										
		STD	0800		355	34		27			0041			65		780										
	:	STD	0900	(352	34	8 8	27			0042			07		796										
	:	STD	1000	C	350	348	88	27	76		0042			50		812										
211	0.6	35	11000	C	350	348	881	27	76							812										
		STD	1100		358	34		27			0043			93	14	832										
		STD	1200		367	34		27	-	0	0043	53	0	36		853										
211		35	T1206		367		920	27								854										
		STD	1300		362	34	-	27			0044		-	80		868										
		STD	1400		358	344		27	-		0044		_	24		882										
211		STD BS	1500 1574		353 349	344	91 904	27		0	0045	13	0.0	69		897										
< 1 L		35	1074		351		934	27							14	908										

IO. NO.	SHIP	LATITU	OE 1/10	LONGITUOE TO N		SOEN JARE		ON TIA		SASY	CRUI		STATE NUM	ON.	DEPTH TO BOTTOA	000	081	WAVE SERVATH		WEA- THER CODE	COOES		5	NODC TATION UMBER
1260	EV	5245	1N 0	51096W	186	21	07 2	26 0	12	968	\perp	P 10	358		2085	1 15	22	1 2		x1	6 6			0035
						WA		WI	SHID	BAS		AIR TE	_	VIS	NO. 085.		ECIAL							
						CODE	TRANS	OIR.	PORCE	ME1		BULB	80		DEFTHS	OBSER	VATIONS							
							-	24	511	13	19	072	0.4	7 8	13	i —								
1					Τ			24		1 .	T		1		1									Τ
	MESSENGE TIME	NO.	CARD	DEFTH Im)	1	*℃	5	*/**	SIGA	1-A		PIC VOLU		DYN. M		OCITY	02 ml/l	PO.		OTAL-P	NO2-N ug - et/1	NO3-N ug - et/l	51 O 4 = 5:	βН
	HR 1/10	<u> </u>			-		-		-		-		-	x 10 ³				+-	-					
1					F.										1				- 1				l	
			STO			777	339		26		00	1531	6	0000		807								
	012	2	OBS	0000		777		957	26							807								
			STE			738	340		266		00	1403	3	0015		795								
	012	2	085	0015		719	341	-	26							789								
			STO			704	341		26		0.0	1307	4	0028		784								
	012	?	OBS	0024		685	-	160	26						_	778								
			STO			606	342		26		00	1080	4	0040		749								
	012	5	OBS	0048		429		533	27					- 0 - 3		682								
			STE			414	345		27		00	0651	4	0057		677								
	012	_	OBS	0058		371		630	27							661								
	012	2	085	0073		366		708	27				-	0070		662								
	0.1.	•	STO			365	347		27		00	0492	5	0072		662								
	012	2	OBS	0097		356	347	7 7 8	27			0433		0083		664								
			STO			357	346	_	27	-		10433		0094		668								
			STO			358	348		27			0409		0104		673								
	0.1.	1	085	0193		360		353	27		00	10409	0	0104		682								
	012	2	ST			360	348		27		0.0	0390		0124		683								
			ST			359	348		27			0390		0144		691								
			51L			359	348		27			0390	-	0163		699								
	012	2	OBS	T0389		358	-	974	27		00	.03,0	, ,	0.03		713								
	012	٤	STO			358	346		27		00	0393	9	0203		715								
			STO			357	348		27			0401		0242		731								
			ST			357	348		27	-		0409		0283		748								
	012	2	OBS	0683		356	_	869	27				•	J = J J		761								
		-	ST			356	348		27		0.0	0418	0	0324		764								
	012	2	OBS	T0780		355	-	869	27				-			777								
		_	STO			356	348		27		0.0	0425	2	0367		780								
			ST		0	358	346	67	27	75	00	0436	8	0410		798								
			ST			361	348		27			0441		0454		816								
	012	2	OBS	T1029		362		881	27			_	-			822								
			STO			362	348	99	27	76	00	0442	9	0498		834								
			ST			361	348		27			0450		0542		850								
			STO		C	358	349	90	27	77	00	0447	2	0587	14	866								
			ST	1400	0	354	349	92	27	79	00	0435	6	0631	14	881								
			STO		0	348	349	93	27	30	00	0428	16	0675	14	895								
	012	2	OBS	T1529	c	346	349	932	27	3 1					14	899								

IO.	SHIP COOE	LATITUDE	10	NSITUDE TOOL	SQUARE			ON THE		TE AR	OF.		OR'S TION MBER	_	TO TO	MA DEF1 01 5'MP	M 0	WAVE BSERVAT	SMOI	WEA- THEE CODE	CLOUB		2	NOOC TATION
						-										13.777		1-1-	_	+	1111	*		
1260	٤V	52417	N 05	120 W			07.2	<u>₽ [0</u>	130 1	968	A 18	1035 TEMP.			591	1	5 20	5 12 12	1	X1	6 5		- 1	0036
					-	10#		D:#.	1410	METE				12.	NO. 085.	0.0144	PECIAL EVATION							
					CC	10	-1	D:#.	FORCE	(mbs			uu.s	P	[PTHS	0000		,						
								23	510	135	09	4 0	383 8		13									
ſ	4455115.CB				1	_	_		310	1			1		_		1	-						
	MISSINGE TIME	CAST NO	CARD	DEPTH (m)	1 7		\$ *	4.	SIGM	A -1	SPECIFIC V	OLUME 1=1187	₹ ∆ brn.	*		OCITY	02 -	10.		1014L-P	14 O 2 w N	NO3-N	\$105	рн
1	HB 1 10			-					-	-			д 1	0,	- 111							ag - 81 I	+9 + 41°1	
					1														1					
			STD	0000	070	2	325	8	255	4	0024	569	000	0	14	760								
	0.30) (OBS	0000	070		325		255						14	760								
			STD	0010	057		329		259		0020	710	002	? 3	14	715								
	030	-	085	0010	057		328		259							715								
	030) (OBS	0018	067		339		266							771								
	0.00		STD	0020	067		339		266		0013	883	004	0		770								
	030) (OBS	0025	066	_	340		267					_		769								
	0.37	, ,	SID	0030	055		341		269		0011	114	005	2		724								
	030	, ,	OBS STD	0049 0050	027 027		344		274			٠.,				616								
			STD	0075	035		346		274		0005		007	-		618								
	030	n ,	OBS	0076	035	-	346		276 276		0005	003	006	5 44		655								
	030		08S	0078	034		347		276	-						656								
	030	,	STO	0100	034	-	347	-	276		0004	561	009	14		659								
			STD	0125	035		347		276		0004		010			666								
			STO	0150	035		348		277		0003		011			672								
	030	n (085	0195	036		348		277		0003	,,,	0.1	. ,		683								
			510	0200	036		348		277		0003	734	013	16		683								
			STD	0250	036		348		277		0003		015			691								
			STD	0300	036	0	348	8	277		0003		017			699								
	030) (085	0389	035	9	348		277				•			714								
			STD	0400	035	9	348	7	277		0003	934	021	3		716								
			STD	0500	035		348		277		0003		029			732								
	030) (085	0583	035	8	348	78	277							746								
			STO	0600	035	8	348	8	277	5	0004	058	029	3	14	748								
			STD	0700	035	8	348	7	277	5	0004	195	033	4	14	765								
	0.30) (OBS	T0779	035		348	65	277						14	778								
			STD	0800	035		348		277	5	0004	295	037	7	14	781								
			STD	0900	035		348		277	-	0004	272	041	9	14	797								
			STD	1000	035		348		277		0004	247	046	2		812								
	030) (OBS	T1026	035		348		277							816								
			STD	1100	035		348		277		0004	_	050	_		829								
			STD	1200	035		348		277		0004		054			847								
			510	1300	035		348		277		0004		059			864								
			STD	1400	035		348		277		0004		063			881								
	0.3.6		STD	1500	035		348		277		0004	/53	068	6		899								
	030) (OBS	T1525	035	8	348	82	277	6					14	903								

EFERENCE		$-\top$		-:	-4/25		STATI	ON TI	ME			RIGIN	ATOR'S		DEPTH		AL.	071	WAT	/E TIONS		EA-	CLOR			1 .	ODC
IN ID. COO			LONGITUDE	8 4	sou.	1		(TMC		TE A R	CRUISE NO.		TATION		OTTO		OF AFL'S			HR SI		DDI	1771 4				UMBER
08 NO.	.	1/10	1/10	•	10"	1-	MO D	AY H	4,1/10		NO.		10 4 11	-		, ~		-	\dagger				-				
311260 EV	5239	9N	051269₩	d 1:	186					1968	ЦIР		360 VP. C	\perp	1298	4	12	_22	2	3	1)	(1-	3	7 '		1 1	0037
						W A	_		SPIED	BAR MET	› 	AY TE	WET	CODI	NO.	0.00	SPECI										
						CODE	18ANS.	DIR.	PORCE	1-5		ULB	BULB	CODI	DEPTH	1 0.03) E R V A	nons									
							1	24	508	12	5 0	83	072	7	13												
wesse		T					1		T		SPECIFIC			E A D		UND			-	04-1	1014	,	NO2-	4 NO,	-N S	105	Ē.,
114	M NO.	CARE		(m)	T	6	3	٠/	SIGA	WA-1	ANOM	AL7-E1	<u>, , , , , , , , , , , , , , , , , , , </u>	103 103	· VEI	LOCIT		0 2 mt/l		+ 91/1	48.		#8 = at			yş = 01/1	рн
HR 1	/10						+	_	+		_		-		_						_			1			
1	1	1		١		659	323		25	6.1	002	572	0 /	000	14	474	0		1					1	,		
_		ST OBS				659		355	25		002	112	,	,000		474											
·	157	ST				592	328			85	002	164	0 (024	. 14	472	ō										
c	157	OBS			_	592	32		25						14	472	0										
	157	OBS	001	9	0	632	34(26	76						475											
		ST				618	340			78	001	280	15	0041		474											
C	157	OBS				502	-	98		90						470											
		ST				356	339			22	001	029	8 (0 5 2		464 453											
C	57	085				112 194	34			31	000	775		0071		457											
		ST	_			294	344			46		638	-	0088		462											
	57	OBS				303		34		53						463											
•		ST			0	294	34	54	27	55	000	556	8	103	14	463	4										
C	57	OBS				283		45		56						463	-										
		ST				302	34			60		505		116		464											
		ST				324	34			65	000	467	3 1	129		465											
C	57	OBS				353	34			70	000	414	. 6.	151		467 467											
		ST ST				353 355	34			72		406		171		468											
		51 51			_	356	34	-		73		399		0191		469											
()57	085	_		-	359		880		75			_			471											
`	, , ,	51				359	34			76	000	386		0231		471	6										
		ST		00		359	34	89	27	76	000	391	6)26°		473											
()57	OBS				358		891	_	76						474											
		51				358	34			76		395		0309		474											
		ST				356	34			77	000	399	15	0349		476 477											
()57	085				355	34	896 90		77 77	000	402	2 3	0389		478											
		S1 S1				355	34			77)410		042		479											
)57	OB 9	_			355		901		77	000					480											
,	111	51				356	34			777	000	419	94	047		481											
		51				359	34		27	777	000)43()5	051		483											
	057	OBS	_		0	362	34	902	2.7	777					1	484	4.5										

4EFERENCE					7	SDEN	STATIO	N. 7142			OR	GINATO	R'S	-	DEPTH	MAL	1	WAVE	WEA-	CLOUG			1000
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CTAT ID.	O75 SHIP CODE EV MESSENCE TIME HR 1/10 O88 O88 O88 O88 O88 O88	5235 5235 6ASTI OF NO.	ST OBS ST	D 0500 T0591 0 0600 0 0700 0 0800 T0808 D 0800 T0808 D 0800 051395W		2357 2357 2358 2358 2358 2358 2358 2358 241 242 242 242 242 242 243 244 244 244 244	348 348 348 348 348 348 348 348 348 348	172 178 188 179 179 179 179 179 179 179 179 179 179	277 277 277 277 277 277 277 277 255 255	75 75 75 75 75 75 75 75 75 75 75 75 76 84 84 84 84 84 84 84 84 84 84 84 84 84	0004 0004 0004 0004 0004 0004 0004 000	093 084 145 213 GINATC STAIN NO STAIN	0330304 03004 03004 03004 03004 03004 0300000000	53 94 35 7 7 24 45 60 85	14 14 14 14 14 14 14 14 14 14 14 14 14 1	746 748 765 782 783 MAKE SPIPILIP OF STAFFLE OF STAFFL	34 CCIAL VATIONS	FD4-P	THER CODE X 2	6 8	NO3-N	51 O ₄ Si	OO39
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CTAT ID.	O75 SHIP CODE EV MESSENCE TIME HR 1/10 O88 O88 O88 O88 O88 O88	5235 5235 6ASTI OF NO.	STORES ST	D 0500 T0591 1 0 0600 0 0700 0 0800 T0808		2357 2357 2358 2358 2358 2358 2358 2358 241 242 242 243 243 244 243 244 244 244 244	348 348 348 348 348 348 348 348 348 325 325 325 325 325 325 325 325 325 325	0 995 1 0 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0	277 277 277 277 277 277 277 277 277 277	75 75 75 75 75 75 75 75 75 75 75 75 76 88 88 88 88 88 88 88 88 88 88 88 88 88	0004 0004 0004 0004 0004 0004 0004 000	093 084 145 213 GINATC STAINNA 1036 FTEMP TYPE 633 523 689 414 905 649 41472 546 3144 3344	033 034 0375 0375 0375 0375 0375 0375 0375 0375	53 94 35 7 7 00 24 45 60 85 11 37 79	14 14 14 14 14 14 14 14 14 14 14 14 14 1	746 748 765 782 783 MAK SPIPOLITY 740 740 740 7406 766 766 766 766 766 766 766 766 766 7	34 CCIAL VATIONS	FD4-P	THER CODE X 2	6 8	NO3-N	51 O ₄ Si	OO39
CTAT ID.	O75 SHIP CODE EV MESSENCE TIME HR 1/10 O88 O88 O88 O88 O88 O88	5235 5235 5235 88 88 88 88 88 88	ST OBS ST	0 0500 T0591 1 0 0600 0 0700 0 0800 T0808	1866	2357 2357 2357 2358 2358 2358 2358 2358 2358 2358 2358 24 2000 20	348 348 348 348 348 348 348 35 325 325 325 325 325 325 325 325 325	172 173 188 1879 1012 1012 1012 1013 1013 1013 1013 1013	277 277 277 277 277 277 277 277 255 256 266 266 266 266 277 277 277 277 277 27	75 75 75 75 75 75 75 75 1968	0004 0004 0004 0004 0004 0004 0004 000	093 084 145 213 GINATC STAINNA 1036 FTEMP TYPE 633 523 689 414 905 649 41472 546 3144 3344	033 034 0375 0375 0375 0375 0375 0375 0375 0375	53 94 35 7 7 00 24 45 60 85 11 37 59	14 14 14 14 14 14 14 14 14 14 14 14 14 1	746 748 765 762 763 765 765 766 766 766 766 766 766 766 766	34 CCIAL VATIONS	FD4-P	THER CODE X 2	6 8	NO3-N	51 O ₄ Si	OO39

ID.	SHIP	LATITU	JD E	LONGIT	UDE	200	4/ RS SQU/			TION TI		YEA	R C	RUISE NO.		ATOR'S TATION		DEPTH TO DTTOM	MAX. DEFTH OF S'MPL'	01	SERVA!	no N		THER	CC	000			DOON HOITATZ ESBINUM
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	10	4	08		0040			103		226		74			25.5	7 0			427										
				TD.	0050			102		30		80			255		093		431										
			_	T D	0075			098		47		93			125		122		439										
			_	TD	0100		_	094	_	63		706		001	003	<i>3</i> 0	149												
	10	4	08		0105			093		662	_	709							449										
				TD	0125			046		81		719			884	-	173		476										
			-	TD	0150			007		196	_	728		000	794	/ 0	194		506										
	10		08		0170		_	044	_	052		734							528										
	10	4	οв		0190		_	077	-	116		737							547										
				TD	0200			097		16		739			696		231		558										
				TD	0250			232	-	49	_	756		000)549	9 0	262		631										
	10	4	0.8	S	0280)	0	340	34	772	2	769						14	686										

TRY IT	о.	SHIP	LATITU	DE	LONGITUDE	Deuri	\$QU			TIDN IGMT	1	YEAR	CRU	IS E	NATOR STATIC	n n	┨.	DEPTH TO SOTTOM	MAX. DEPTH OF	1	SERV	A TION	_	WEA- THER CODE	C	OUO.		Ì	STA	TION
TOE NI	0.			1/10	1/1	3	10"	1.	W 7	DAY	HR.1/10		и	٥.	NUMB	ER	Ť.		S'MPL'S	DIR.	HĢ	PER	51 A	CODE	143	E A WI			NU	VIOE R
3112	60	EV	5226	2N	052057		186	22	07	26	120	1968	3 1		364		_ _	282	03	34	<u>.</u> 1	2		X1	6	6			0	041
								WA*	- R		WIND		10-		EMP. Y	— v	15.	NO.	SPEC	CIAL										
								CODE	TRAN	S. DIR	SPEED DR FORC	m.		DRY	W E	T CO	ne	OBS.	OBSERV	ATIONS	-									
										33	+	-	19	089	0.8	3 8	-	09			1									
	١						1		-	133	1304	_ [1 .	1		1	۵∫ده	_	T -	-		4		Т							_
		MESSENGE TIME :		CAR		(m)	1	*C	:	٠4.	ŞIG	T-AM		OMALT-I		DYN.	м.	AETO 200		02 ml/		PO 4=P /p = 01/1		OTA L → P ug = at/1	NO	2-N	NO3=N pg = of/1	\$104-		pH
		HR 1/10			-		+		-				-		\rightarrow	X 10	,	-	-		-+		+				pg - 0	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	-	
									}				1		- 1				!				-							
				S1				652	-	50	_	54	00	245	74	000	0	147												
		120)	089				652		498		54					_	147												
				S1				486		73		92	_	02096		002		146												
				S1				274	_	95		29	0.0	173	15	004	2	145												
		120)	089				274		948		29					_	145												
				S1				060		115		66	00	1386	02	005	В	144												
		120		083				132		3258 300		77 81						144												
		120	,	085 51				143		340		88	~	01174	. 1	008	- 2	144	-											
				51				077		359		02	_	0104		011			450											
		120	,	089				056	_	3715	_	12	01	0104.	12	011	•	144	_											
		120	,	51				055		374	_	14	0.0	00934	43	013	6	144												
					TD 017			051		87		24	_	00836		015		144												
				51			_	047		99		34		00744		017		144												
		120)	089			_	047		9992		134	•			-			482											
			-		TD 020			137		24		143	0	00666	66	021	3	149												
		120)	089	_			137		235		143	-						577											
					TD 02			250		+52		757	0	0054	28	024	3		639											
		120)	08				255		539		758				-			642											
		120		08:				342	-	779		169						14	-											

ID.	SHIP	LA TITU	DE 1	ONGITUOE	Dept	SOUATE		GMTI	٧	EAR C		ATOR'S TATION TUMBER		DEPTH TO BOTTOM	OEPTI OF SMPL	H 08	WAVE SERVATION	000	CODE	5	\$	NODC TATION TUMBER
1126	EV	5221	7N C	52230W			07.		35 1	968	11P 10	365 ur. E	Vn.	0275 NO.	1	3 33	2 2	χı	66	,		0042
						CODE		DIR.	SMID OF FORCE	METER (mbs)	BOTA	WET BULS	CODE	OSS. DEPTHS	l narie	VATIONS						
					_		Ļ	33	504	122	094	083	8	10		,	L,		_	_		_
	MESSENGI TIME HE 1/10	NO.	CASD	DEPTH	im I	2.1	s	٠/٠٠	SIGMA		MCIFIC VOLU	., 0	103 1 103		OCITY	02 mU	PO4=P ug 1 e1/1	10TAL-				
				ļ								į									İ	
		_	STE			0681	32		255	-	002495	4 0	000		750							
	13	5	085	000		0681 0558	32	495	255 258		002182	1 0	023		750							
			510 085	001		0477		834	260		002182	1 0	023		674							
	13	י	510			0334	32		262		001778	6 0	043		616							
			STO			0103	33		266		001442		059		519							
	13	5	085	003		0016		272	267			•			482							
	•	-	STO			-0070	33		268		001190	2 0	086		447							
	13	5	OBS	006		-0111		511	269						432							
	• • •	-	510			-0093	33		270		001043	0 0	114		443							
	13	5	OBS	009		-0056		697	271					14	465							
	• • •	-	STO		-	-0048	33		271		000952	6 0	138		470							
			STO		5	0005	33	86	272	0	000871	7 0	161	14	500							
	13	5	OBS	012	5	0005	33	858	272	0				14	500							
		-	ST			0076	34	05	273		000765	6 0	182	14	539							
	13	5	OBS	015		0076	34	050	273					14	539							
	13		OBS	016	0	0069	34	080	273	5				14	538							
	13		085	019	0	0120	34	226	274	3				14	568							
		-	ST	020	0	0144	34	29	274	7	000630	0 0	217	14	581							
			ST			0311		68	276		000477		244	14	668							
	13	5	OBS	7025	1	0315	34	694	276	5				14	670							

TAY ID.	CODE	LATITUD	E 1/10	LONGITUDE	PUBLI	10°	ARE		TION IGMT		YEAR		RUISE NO.		TION MEER		DEPTH TO 50110		MAX DEPTH OF S'UPL	L	0856	WAVE ERVATIONS HGT FIR SI	WEA- THEE CODE	C	000			NODC NOTATION NUMBER
311260	EV	52177	N I	052401W		186			26	150	196	a		1036			028	0	03	3	14	2 3	x 2	7	8			004
							WA.	-	+	WIND		10-	· -	R TEMP.	_	VIL	NO. 085.			CIAL								
							CODE	TRAN	S. DIR.	1010	1	T ER			WET	CODE	DEPTH	S	193280	/A TIDI	NS							
									33	511	1	22	10	6 (83	8	0.8											
	MESSENGI TIMI HR 1/10	약 NO.	CARD	DEFTH	t= I	T	τ	,	-4.	SIG	MA-T	,	SPECIFIC S		101	∆ p. %		00%		02 -	m IZT	+ PO ₄ =P +g + atr	TA L=P	ND:		NO3-N #\$ - et/1	51 O	
												,					Ì		•									İ
			ST				738		62		52		0024	730	0(000			74									
	15	0	085	000			738		623		52								74									
			ST				590		66		74		0022			024			17									
			ST				429		76		00		0020	173	0	045			54									
	15	0	085				396		783	_	05							_	41									
			ST				209		01		40		0016			063		-	64									
			ST				123		43		91		0011	485	0(091			22									
	15	0	085				123	_	431		91								22									
			ST				113		153		99		0010			119			33									
			ST				102		165	-	708		0009	850	0	145			43									
	15	0	085				102		1650		708								43									
			ST				044		80		718		0008			168			77									
			ST				007		193		726		0008	183	Q	190			06									
	15	0	085				007		1929		726								06									
			ST				087		15		739		0006	971	0.	228			54									
	15	0	085				103		192		742								63									
			ST				168		33		748		0006	214	0	261			01									
	15		085				168		327		748								01									
	15	0	085	026	0	0	219	34	429	2	752						1	46	26									

REFERENCE CTAY ID. CODE NO.	SHIP	LATITU	DE 1/10	LONGITUDE 1/10	SQUARE	STATION TO IGMTI	TEAR	DRIGINATO CRUISE STAT	ION .	DEPTH DEPTH DF DF S'JAPL'S	OBSERVATIONS DIR HOT PER STA	WEA- THEF CODE	CODES.	HODC STATION HUMBER
311260	EV	5213	2N	052538W	W.	TRANS. DIR.	1968 SPEED MET (mb S14 10	ER DRY W	TE CODE	NO. SPEC OBS. DESERVA		x1	7 6	0044
	MESSENGI TIME MR 1/10	NO.	C AR TYP		1 %	5 %.	SIGMA-T	SMCIFIC VOLUME	≥ ∆ D Dvn x 10 ³	SOUND	02 ml/l POa-P #6 + e1/l	FOTAL=P	NO2=N NO3-	
	16	5	51 085 51	0000 0 0010	0711 0711 0674 0637	3269 32686 3270 3270	2561 2561 2566 2572	0023908 0023382 0022870	0000 0024 0047	14764 14764 14752 14738				,
	16	5	0BS	0025 0 0030	0618 0438 -0033	32708 3291 3350	2574 2611 2693	0019141 0011287	0068	14732 14661 14465				
	16 16		0B5 51 0B5	0 0075 0075	-0033 -0063 -0063	33500 3369 33692	2693 2710 2710	0009687	0124	14465 14458 14458				
	16	5	51 085 51	0100 0125	-0019 -0019 0032 0076	3384 33842 3397 3409	2720 2720 2728 2735	0008726 0008008 0007345	0147 0168 0188	14485 14485 14514 14540				
	16 16		085 085	0150 T0199	0076 0142	34091 34292	2735 2 74 7			14540 14580				
	16	5	51 089		0144 0204	3430 34431	2747 2753	0006225	0221	14581 14616				

REFERENC	SHIP	LATIT	UDE	LONGITUDE	PICT.	MARS			TION (GM1		YEAR	CRUISE	DRIGINAT	OR'S TION		DEPTH	DEPTH	: 1		V A V E	ONS	WEA		LOUD			NODC
DOE NO			1/10	11/10		10*	1"	MO	DAY	HR.1/10		NO.		AA BER		BOTTOM	S'MFL	SD	III >	GTPER	564	COD	TYP	I AM			NUMBER
	60 EV	5208	34N	053086W		186	23 WA1		26	184 WIND	1968		1036			0232	1	3	4	2 3		× 1	7	7		Ì	0045
							COLOR		DIA	SPEE	77.61	ER ()PY 1	W E T	CODE	OBS. DEPTHS	192 PBSERV	VATID	N S								
									33	512	10	8 0	94 0	83	8	0.8											
	MESSEN TIME HR 1/	of ND.	CAR		(m	ī	*c	s	٠	SIC	I-AME		VOLUME ALY-1107	Dï	A D. N. 34		UND	0:	m I I	PO 2-		101AL=F	NO.	- 01	NO3-N yg - o/ I	\$1.0a	
			1	200	^					-				1			.										
			51				729	32			44	002	5507	Oι	000	_	769										
	1.8	5 4	085 51				729 559	32	504		544	000	4576	0.0	125	_	769 743										
	1.6	94	085				559		⊃U 498		, E 2	11.12	45/5	U.	120	_	743										
	1.6	34	51	_			21	32		-	592	002	0943	0.0	047	-	649										
			5 T				212	32			525		7793	_	067		563										
	1.6	3.4	085				212		831		526	001	,		291		563										
		, -	ST			-01		33			581	0.01	2416	0.0	97	_	421										
	1.6	3 4	085			-01			328		83	001		0.			418										
	18		085			-01			522		9.9						434										
		J -4	51			-01		33			99	201	2717	0.1	126	-	439										
			5 T	-		~00		33			707		9934		152	14	468										
	1.6	9.4	085			-00			667		707						468										
			5 T			-00		33			718	000	8922	0.1	175		495										
	1.8	8 4	085				149		984		728						526										
			5 T			0.0	1=2	33			729	000	7959	0.1	196		- 27										
			ST			0.2	205	34	35		747	000	6313	0.2	232		509										
	1.6	3 4	085	T021	0	0.2	262	34	425	27	750					14	628										

NCE	SHIP				- =	4/ E			ON TI				ORIGIN	ATOF'S		DEPTH	DEPTH		WA	VE ATIONS			CLOUC			NODC
IQ. NO.	CODE	LATITUE		LONGI							EAS	CRUIS!		TATION		10 101104	0.5					ER	COUE:			STATION NUMBER
NO.			1/10		1/10	10*	1.	M D C	AT H	R,1/18	-	- NO.	+ -	10 m 11			3 44 6	1	+	P\$1 3			-		-	
260	EV	5203	5 N	0532	200W	186			6 1		968	LIF		369		0320	03	34	2	2	l x	1	3 7		}	0046
							W A	_	*	SPEED	BARG	›• ├ ─	ATR TE	_	VIS	NO.		CIAL								
							CUTO	TRANS	OIL	01	M ETE		DRY	WET	C00	DEPTHS	OBSERV	A TIONS								
								_	33	514	10	8 (089	075	7	09			1							
		T1		-				1	,,	1	1	- 1		1	E 2 0	٠,			+						T	. T
	M\$559HG8	CAST NO.	CARD		OEFTH IMI	1	°C	\$	٠/	SIGM	4-1		C VOLU		IYN, M		DNU UNU	02 =0		10μ−₽ g = a1/1	TOTAL		402=N rg + et/l	NO3-N	\$1 Oz-	
	H# 1/10					+		-		-	_				x 10 ³	+	-		-				-	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	-	-
						1		١		1				.							1	1		1	1	1
			ST		0000		738	323		253		002	2675	1 (0000		771									
	199	,	085		0000		738	32:		253 253		00.	2613		0026		771									
	100		ST		0010		657 657	327		253		004	201)	,	JU 2 6		740									
	199	,	OBS		0010		598	32		255		001	2483	7 /	0052		719									
		_	ST OBS		0021		577	32	-	255		004	240)	′ '	,0 ,2		711									
	199	4			0030		173	321	-	263		00	1707	2	0073		547									
		_	ST		0030		052	330		265		00.	1101	2)		495									
	199	¥	085					33		268		00	1228		102		447									
		_	ST		0050		068					00	1220	,	J 1 U 2	-	447									
	19	9	OBS		0050 0075		068 077	33: 33:		268 269		00	1079	٤ .	131		450									
	10	^	51	-	0075		085	33		271		00	10/9	,	1 2 2 2		452									
	19	9	OBS ST		0100		083	330		271		000	0961	4	157		453									
			-	-	0125		050	33		271			0901 0897		180		474									
	100		ST		10148		001	33	-	272		000	007/	, ,	,		502									
	199	7	08S		0150		007	33		272		000	0825	2	201		506									
	١.	~		-			159	-	239	274		500	002)	_ '	, ,		586									
	199	•	085		10196			34.	-	274		00/	0671	۵.	239		592									
			ST	-	0200		170	-	-			-	-			-										
			ST		0250		268	349		275			0573	-	270		647									
			ST		0300		303	340		276		000	0503	8 1	297		672									
	19	9	OBS		T0306	0	303	340	548	276	~					14	673									

	300	LATITU	DE 1/10	LON	GITUOE	PENT	10°		(ION T	IME	TEAR	CRUISE NO.		TOR'S		OEPIH TO BOTTOW	DEPTE OF	н	OBSE	W A VE	ONS	11		CLOUD			NODC STATION NUASE	N
1260 E	v	5158	$\overline{}$	05	3329	-	186	1				1968	IIP	10	370		0380	03	1		2 2	+ -	x	1	3 6			004	. 7
								WA	****	,	VIND	BARC)· -	NIR TEN	P 10	VIS	NO.	5 91	ECIAL										
								CODE	TRANS.	OIR.	1010	METE		ULB DRY	W ET BULS	CODE	OBS. DEPTHS	082EP	V A TIO	IN S									
										33	512	-+	5 0	89	078	7	09												
1 7	SSENGE TIME C	CAST NO.	C A B		DEPTH	tm i	,	'n	s	٠/	SIG	M A − T	SPECIFIC	¥0,U≠ 4,₹=110) DI	A D		UND	02	m /	10.		101AL		NO2-4 #2 - 81/	NO3-N	51 O . ••		н
1	17.10	-					_		+		+						+							-†			 	\top	_
1		1	s.	το	000	0	0	747	326	54	25	52	002	4736	5 0	000	14	778						4	,				
	216	1	08		000	0	0	747	326	5 3 8	25	52					14	778											
			S	TD	00	0	0	662	32		25	37	002	615	0	025		742											
	216	•	08:		00			662		305	25							742											
			_	TD	00.		-	587	32			57	002	425	2 0	051		715											
	216	•	08		007			587		441	25							715								,			
				T D	00			166	32			29	001	740	0	071	_	543								•			
	216	•	OB:		004			129		129	26		1	34.31		102		414											
				T D	00			145	33 33.		26			342		102 135		408											
	216		0B:	TD	00			162 162		29 290	26 26		001	244	2 0	1 9 0		406											
	216	•		5 TD	010			099	33			97	001	093	2 0	164		443											
				TD	01			048	33			10		967		190		473											
				TO.	01			011	33			20		873		213		497											
	216		08		01			011		845		20	000			- 1 /		497											
	216		ОВ		101			015		962	27							515											
		•		TD	021			104	34			37	000	723	• 0	253		561											
				TO	02			247	34			50		607		286		637											
	216	5	OB		T 0 2		0	262	34	471		52					14	645											
			S	T D	03	00	0	287	34	61	27	61	000	511	0 0	314	14	664											
	216		08	S	T 0 3	3 3	0	306	34	648	2.7	62					14	679											

ID.	SHIP	LATITU	DE 1/10	LONGITUDE	NDC18	47 RS SQU			TION T		184	A 8	CRUIS NO.	E	STATIONS	,	DEP1H TO \$01104	DEPTH DE S'MPL"		WAV SERVAT		THEA CODE	CODE		5	NGDC FATION UMBER
1260	Ev	5153		053454W	+-+	186			26		19	68	111	+	371	-	0417	04	1	+	-	x1	4 2			0048
			,			[W A			A IN D		BARO.		A IR TE		Τ,	NO.	1	-]		,				00.0
							CODE	TRANS	DIR.	5PEE	۰ ۰	METER (mbal		₽ULE DXY	WET BULE		240	0.4554.0	CIAL							
									28	510)	122	(83	071	7	09			l						
	HESSENGE TIME HR 1/10	S NO.	CARD	DEPTH	(m)	,	°C	5	٠	\$10	M.A	.,		C VOLL		€ ∆ 0 51N, W		UND	02 ml/		4-P	*07AL=P	N 02~N ug - ati	NO1-4	\$1 C a = \$	βН
																	1	Ī							1	•
			ST				764	32			34		00	2639	4 (0000		782								
	23	1	085	000			764		446		34							782								
			ST				571	32			666			2336		0025		708								
	23		085	002			342 214	32	667 667		98		00	2040	0 (0047		615								
	23.	1	51				250	32			512 539		00	1649	1 /	0065		561 491								
	23	1	085	003			070		035		557		00	1047		,005		439								
	20.	•	ST				162	33			576		00	1292	, ,	0095		401								
	23	,	085	005			162	_	230		576		00.	, .	1 1	JU 9 3		401								
	L) .	•	51				133	33			591		00	1144	A (125		422								
			ST				102	33			704		-	1027		152		443								
	23	1	085	010		_	102	_	594		704				, ,	, - , -		443								
		•	ST				080	33			711		000	953	9 (177		459								
			ST				36	33			720			874		200		485								
	23	1	085	015			036		828		720				- '			485								
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